2023 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, as amended by the Environment Act 2021

Date: June 2024

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Executive Summary: Air Quality in Our Area

Air Quality in Teignbridge District Council

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year[1].

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution[2].

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

[1] UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

[2] Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

Within the District of Teignbridge the local air quality is generally very good. However, there are locations where air pollution levels are high - typically along busy congested roads, with the highest levels being experienced where the roads are either narrow and/or have a steep incline and/or have street canyons (i.e. roads with properties close to the side of the road on both side). The pollutant of specific concern in these locations is Nitrogen Dioxide. There are two National Objectives for levels of Nitrogen Dioxide. These are for the average level over a whole year (below 40 µg/m^3) and the average level for one hour below 200 µg/m^3. The review and assessment process commenced in 2005 resulted in four Air Quality Management Areas (AQMA's) being declared because it was predicted that the National Air Quality Objectives would not be met for Nitrogen Dioxide (NO_2). The original four AQMAS's were: -

- Dawlish (Iddesleigh Terrace)
- Teignmouth (A379 along Bitton Park Road)
- Kingskerswell (Old A380)
- Newton Abbot Town Centre

In 2008 a Detailed Assessment was carried out which resulted in the boundary of the Newton Abbot Town Centre AQMA being revised and expanded to include Wolborough Street and in Kingsteignton, Newton Road and Gestridge Road.

However, in 2021 two previously mentioned AQMA's - Dawlish (Iddesleigh Terrace) and Kingskerswell (Old A380) were revoked which now leaves Teignbridge District Council with two AQMA's (Teignmouth and Newton Abbot & Kingsteignton).

Teignbridge District Council has a monitoring network that is designed to identify the areas with the highest levels of Nitrogen Dioxide. This monitoring is carried out in two forms, one being diffusion tube monitoring and the other being continuous monitoring stations in the form of Osiris monitoring for PM 10 and PM2.5 Monitoring has been undertaken for Nitrogen Dioxide (NO_2) and Particulate Matter (PM_{10}) and ($PM_{2.5}$) both within the Council's AQMA's and outside.

Further details of the exact AQMA's can be found on the Teignbridge District Council (AQMA) web page

Geography and Population with Teignbridge

Teignbridge is one of the 8 districts of Devon. It has an area of 68,002.31 hectares which represents 10.25% of the total area of Devon County. The resident population of Teignbridge in 2021 was 134,803 which represents 16.61% of the total Devon County resident population of 811,640. The total population of Teignbridge is projected to be 148,573 by 2039. The predominant age band in Teignbridge in 2022 was 55 – 59.

In 2022 Teignbridge had 21,444 aged under 16 (representing 15.8% of the total population) and 37,255 people aged 65+ (representing 27.4% of the total population)

Data provided by Local Government Inform

Latest Ratified NOx Data 2023

Measured results for 2023 can be found in Table A.3 of this report. Trends in annual nitrogen dioxide concentrations can also be seen in Figure A1. These show that in 2023 levels of nitrogen dioxide were below the objectives at every site apart from one.

During 2023 Teignbridge District Council monitored 44 locations. Out of these locations, there was only 1 that exceeded the National Air Quality objective for Nitrogen Dioxide. This location was within the Teignmouth Air Quality Management Area (AQMA). There were 3 sites that needed to be annualised due to less than 75% data being recorded. These sites were Tube 68 – Shorland House Dawlish, Tube 77 Lamppost No 9, Bitton Park Road, Teignmouth and Tube 78 Lamppost No 8, Bitton Park Road, Teignmouth.

From the other monitoring locations, 41 were with the National Air Quality objectives and 2 were within 10% of the National Air Quality objectives. To be noted that the 2 sites that were within 10% are all within existing AQMA's. It is also to be noted that table A.3 will show 45 locations one recorded location is the control tube which has not been included in the final figures.

The overall summary of the 2023 data shows the following: -

- One tube exceeded the National Air Quality Objective with levels of 42 µg/m 3 (Teignmouth AQMA). To be noted is that although still above the National Objective this tube has continued to decrease over the last few years. In fact, since the pandemic in 2020 the overall annual figure has decreased by 5 µg/m^3.

- 2 tubes were within 10% of the objectives with levels between 36µg/m^3 and 37µg/m$^{3.}$
- 36 tubes all had continual improved levels.
- 5 tubes showed a slight increase from the previous year, but this was very negligible and not more than 1-2 µg/m^3.
- Overall tube data confirms that there is a year-on-year improvement in levels of Nox with TDC district.
- 3 tubes were annualised due to obtaining less than 75% data. These tubes were No 68 Shorland House, Dawlish, Tube 77, Lamppost No 9 at Bitton Park Road, Teignmouth and Tube 78m Lamppost No 8 at Bitton Park Road Teignmouth

Continuous Data – PM $_{10}$ and PM $_{2.5}$.

Although indicative, Osiris monitoring for PM_{10} and $PM_{2.5}$ has taken place at 3 locations in the district. Unfortunately, the available date for all three sites was annualised due to there not being 75% data or more. This was due to issues with the renewal of the contract that have now been resolved. Three background locations were used namely, Plymouth, Yarner and Honiton. The results can be seen below: -

PM_{10}

Bitton Park Road, Teignmouth - 17.8 µg/m^3

Alexandra Terrace, Teignmouth – 14.1 µg/m^3

Queen Street, Newton Abbot – 14.1µg/m^3

All three locations showed that they did not exceed the current annual National Objective of 40 µg/m$^{3.}$

$PM_{2.5}$

Bitton Park Road, Teignmouth – 10.1 µg/m^3

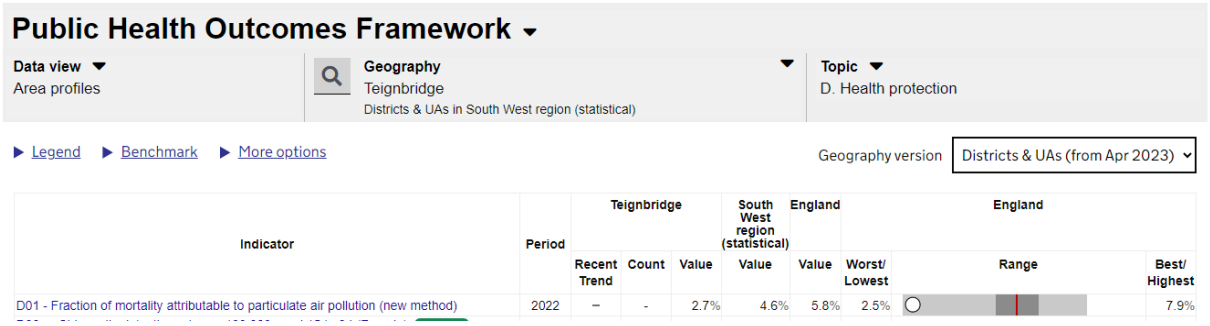
Alexandra Terrace, Teignmouth – 8.7 µg/m^3

Queen Street, Newton Abbot – 6.9 µg/m^3

The above method of monitoring is essentially indicative, and conclusions should not be drawn at this stage to the slightly higher levels of PM 10 and PM 2.5 at Bitton Park Road, Teignmouth from 2023 as this could be due to having to annualise the current year's data as insufficient data was recorded and also potentially skewed by using different background sites from previous reports.

Although monitoring is essentially indicative this data nevertheless provides a good indication of levels of $PM_{2.5}$.

The Public Health England's Public Health Outcomes Framework tool shows that in Teignbridge in 2022 the fraction of mortality attributable to particulate air pollution was 2.7%. This is below the regional figure for the South West (4.6%). Teignbridge District Council therefore has levels of particulate matter, which is causing harm, but this problem is less severe than that in the majority of the rest of the Country.



Public Health Outcomes Framework

Data view: Area profiles | Geography: Teignbridge, Districts & UAs in South West region (statistical) | Topic: D. Health protection

Legend | Benchmark | More options | Geography version: Districts & UAs (from Apr 2023)

Indicator	Period	Teignbridge			South West region (statistical)	England	England		
		Recent Trend	Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
D01 - Fraction of mortality attributable to particulate air pollution (new method)	2022	–	-	2.7%	4.6%	5.8%	2.5%		7.9%

Data from Public Health England

Teignbridge District Council has a monitoring network that is designed to identify the areas with the highest levels of nitrogen dioxide, at the locations where the objectives apply.

Most of the monitoring sites are therefore on residential properties in close proximity to the busiest roads. The results of the monitoring conducted by Teignbridge District Council is not generally representative of typical or average conditions across the whole of the district. Instead, it is indicative of the worst-case locations.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan[3] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[4] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[5] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel, and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

The Devon Carbon Plan 2022

This plan has been endorsed by Teignbridge District Council and Devon County Council and it sets outs actions like: -

- Develop EV Charging Strategies to deploy the right chargers in the right place.
- Devon Climate Emergency (DCE) Response Group partners to use their assets to provide publicly accessible EV charging and shared mobility infrastructure.
- Accelerate the switch to Ultra Low Emission Vehicle taxis by placing requirements and incentives within the licensing process.

Climate Change Emergency and Carbon Action Plan (Part 1)

In 2019 Teignbridge District Council declared a Climate Change Emergency and committed to doing what is within the Council's powers to become carbon neutral district

[3] Defra. Environmental Improvement Plan 2023, January 2023

[4] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

[5] DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

by 2025. This led to the development of the Climate Action plan which was adopted last year.

In relation to EV's this includes a range of actions including to: -

- Transition the council fleet to zero emission vehicles.
- Develop a green car loan and EV salary sacrifice scheme for staff.
- Enhance the provision of workplace charge points through developing a strategy.
- Explore opportunities for shared low carbon mobility services such as pool cars and car clubs.

Carbon Action Plan (Part 2)

This is due to launch next year.

Liberal Democrat 2023 Manifesto

As part of efforts to tackle climate change, the manifesto commits to increasing the provision of EV charge points in Teignbridge District Council's car parks to a minimum of 20% of car parks spaces and supporting the provision of solar car ports in Teignbridge District Council's car parks.

Electric Vehicle Infrastructure and Ultra Low Emission Vehicles Policy

Following the Devon EV Strategy officers agreed to work with Devon County Council to localise the data to Teignbridge and develop specific actions for the district. Delivery of the draft policy has been progressing since 2023 following newly elected Councillors and workshops have taken place. Consultants have been appointed and a strategy is looking to be adopted within 2024.

The Devon & Exeter Low Carbon Energy & Transport Technology Innovator (DELETTI)

The installation of the 4th charging point was in 2023. All 4 dual rapid charging points uptake has been very good. As expected, the two chargers which were installed at seasonal locations show greatest usage throughout the year as indicated by a 134% increase in sessions from March – August. In contrast to a 45% decrease during August – November 2023.

On Street Residential ChargePoint Scheme (ORCS)

10 sites have been identified with the Teignbridge District for installation of EV charging points. It is envisaged that these will be completed and operational in 2024.

LEVI Fund

Teignbridge District Council have signed up to a consortium led by Devon County Council who have secured government funding (Local Electric Vehicle Infrastructure (LEVI). We have submitted an initial letter of intention to be a part of this funding. Further work to be carried out in 2024 identifying sites and resources to deliver this project.

Proposed Local Plan 2020 – 2030

This is currently being updated and includes proposals to ensure residential and commercial development proposals are ready for electric vehicles (EV ready).

Teignbridge Local Plan 2013 – 2033

This plan was adopted in May 2014, the plan notes that new development on transport issues will be assessed and development will be located and designed to support infrastructure for EVs, alongside other sustainable transport choices.

Air Quality Action Plan

The revision of the Air Quality Action Plan has been delayed due to resources being directed to the various EV projects. Following the local elections in May 2023 the new Executive Member has been briefed and a draft plan shared with them. Officers are targeting the end of February 2024 to provide the completed draft to DEFRA for appraisal.

Cycle Network/Active Travel

- The Ogwell Strategic Cycling & Walking Link (to Newton Abbot)
  Funding secured and approval from Executive in June 2023, followed by work to finalise designs, to be ready for procurement & construction early in 2024.

- The Queen Street enhancements scheme, Newton Abbot (for pedestrian & public realm improvements)
  Secured further funding in May (via DCC partnership) and attained DCC Cabinet approval in July (for construction to take place during 2024).

- National Cycle Network Route 2 Improvements scheme in town centre vicinity of Newton Abbot
  TDC Executive approval April 2023 for the stretch via the Cricketfield car park, followed by work to finalise designs ready for procurement & construction in 2024.

- Teign Estuary Trail (to link Teignmouth to Kingsteignton/Newton Abbot)
  Stakeholder workshop held September 2023, this fed into the recommendations to TDC Full Council in Nov 2023 which were approved and will enable an Outline Business Case to be produced in 2024 and subsequent funding to be provided dependent on outcome of the business case.

- Broadway Road, Kingsteignton
  Funding secured to progress an options review for potential of an active travel link in the vicinity of Broadway Road (options review to be completed 2024).

- A379 active travel bridge at Matford, South-west Exeter
  Bridge installed to significantly improve links north – south, with finalising works ongoing and opening to public expected 2024.

- Stover Trail bridge
  New bridge installed to improve active travel access on this popular leisure route between Newton Abbot & Bovey Tracey.

- Dawlish Link & Bridge
  Work progressed on project to install new road bridge alongside a new active travel route via new developments opposite Sainsburys in Dawlish.

- TDC continue to host biannual Teignbridge Cycle Forum events for a wide range of stakeholders.

- TDC continue to work in close partnership with DCC on proactive active travel project progress and delivery.

Conclusions and Priorities

What can be seen from the Council's monitoring data is that there were no exceedances identified outside of the Council's current Air Quality Management Areas. The Council does not therefore intend to review the AQMA order or AQMA boundaries at present.

Year on year trend data continues to show a reduction in Air Quality levels within Teignbridge District Council.

For the Air Quality Management Area (Teignmouth), discussions are due to take place in 2024 into the possibility of using Roadvent to help reduce levels. It would therefore be the case that increased nox tube monitoring could be needed within this AQMA during 2024.

The Council's priorities for 2024 are: -

- Publish the Air Quality Action Plan
- Produce an Electric Vehicle Strategy
- Continue supporting and implementing projects to increase electric vehicles and charge points for Teignbridge.
- Continue to improve the Cycle Network facility.
- Continue to support the Carbon Action Plan

Local Engagement and How to get Involved.

Public participation in Air Quality issues are vital to maintaining standards with the objectives. Everyone in Teignbridge can make small changes to their daily routine to improve air quality including: -

- Walking or cycling more
- Using public transport
- Car sharing
- Not leaving vehicles idling
- Checking your vehicle is as economic and green as possible. Green Car Guide

Regular involvement takes place with the Executive Member for Waste management and Env Health and the Executive Member for Climate Change and other elected members.

Teignbridge District Council does a lot of interacting with the public by means of social media and this is the platform used to advise them of air quality issues.

In 2023 the Authority also dealt with 36 service requests relating to either planning applications having an impact on air quality or concerns from the public regarding the current air quality levels.

Teignbridge District Council also welcomes proposals from community and interest groups who wish to improve the air quality in their local area.

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Teignbridge District Council with the support and agreement of the following officers and departments:

Becky Wotton – Environmental Health

Colin Bignall – Environmental Health

William Elliott – Climate Change Officer

Estelle Skinner – Green Infrastructure Officer

This ASR has been approved by:

David Eaton – Environmental Protection Manager

This ASR has been sent to the Director of Public Health but to date has not been signed off by them.

If you have any comments on this ASR please send them to Becky Wotton at:

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1 Local Air Quality Management

This report provides an overview of air quality in Teignbridge District Council during 2023. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Teignbridge District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by Teignbridge District Council can be found in Table 2.1. The table presents a description of the 2 AQMA's that are currently designated within Teignbridge District Council. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMA's and also the air quality monitoring locations in relation to the AQMA's. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Newton Abbot & Kingsteignton	2005 Amended 2009	NO2 Annual Mean	Congested streets and narrow in places with residential properties within metres of the edge of the roads. The AQMA was further extended in 2008 following a Detailed Assessment	NO	48.8	36.6	1	AQAP 2010	Air Quality Website Teignbridge District Council
Teignmouth	2005	NO2 Annual Mean	Primary route and main thoroughfare for HGV traffic	NO	56.8	41.9	0	AQAP 2010	Air Quality Website Teignbridge District Council

☒ **Teignbridge District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Teignbridge District Council confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Teignbridge District Council

Defra's appraisal of last year's ASR concluded: -

- Reference to the Public Health Outcomes Framework has been made and this practice should continue going forward.
- The Council provided a lot of detail in the Executive Summary, in the particularly the council contextualizes some of the increases in monitoring concentrations in regard to population increases. This is helpful and should be included in future ASR's.
- The council states it measures in clear detail including detail regarding progression in recent years and priorities for future years, please continue this into future years. However, the measure should make reference to the most recent guidance documents, measure No 7 refers to Air Quality Technical Guidance (16) which has been superseded by the Air Quality Technical Guidance (TG22). = This has been amended.
- Trends have been presented with a robust comparison to the Air Quality Objectives, however discussion regarding them in relation to recent year's data is lacking = This has been addressed in this ASR.
- It would be helpful to add the AQO to Figure A5 = This has been addressed.
- Dates are not aligned with what has been declared within the Defra Portal states they were declared in March 2007 for both AQMA's = This has been addressed.
- AQMA's and automatic monitors should be included in maps to help clarify whether monitoring within the AQMA's is sufficient = This is added to this report.
- No clear actions have been implemented to address $PM_{2.5}$. = This has now been included.
- Automatic Monitor CM2 has been mentioned in Table A5 but no details have been given in table A.1 for this site = This has been included.
- An AURN monitor has been identified within the boundaries of the LA. It would be helpful to conclude the data from this monitor in future reports. This could also potentially be used as a triplicate co-location to help determine a local bias adjustment factor which could potentially be more representative of the area = A local bias will be considered for future bias adjustments for NO_2. For $PM_{2.5}$ and PM_{10} has been addressed in this report.

- The ASR has not been signed off by the relevant Public Health Body. This is an example of good practice and is expected to increase support for measures to improve air quality, as such it should be included in future ASR's = Reports have been sent to Public Health, but no responses have been received.
- There are some issues regarding numbers presented, the council states 44 diffusion tube locations were used but 45 have been counted. Within the executive summary it is unclear what the value for the annual PM_{10} is at Alexandra Terrace = This has been addressed.

Teignbridge District Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 8 measures are included within Table 2.2 with the type of measure and the progress Teignbridge District Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

Key completed measures are:

- Continued consultation with Town and Parish Councils on the draft Air Quality Action Plan.
- Secured funding for the fleet EV project to replace fleet vans.
- Secured funding for a heat decarbonisation project at Broadmeadow Sports Centre.
- Ongoing involvement with the DELETTI process and working with partners on delivery of the On Street Residential Charge Point Scheme (ORCS).
- Continuation of improvement of the District's Cycle Network.

Teignbridge District Council expects the following measures to be completed over the course of the next reporting year:

- EV Strategy
- Finishing fleet project
- Developing a pipeline for future projects and associated business cases.
- Revised Air Quality Action Plan
- Continue involvement with the ORCS project which will see a further 9 charge points installed at further car parks within the district.

Teignbridge District Council's priorities for the coming year are: -

- Implementation of the Air Quality Action plan
- Implementation of measures within the Carbon Action Plan
- Implementation of an E V Strategy.

Teignbridge District Council worked to implement these measures in partnership with the following stakeholders during 2023:

- Devon County Council
- Town and Parish Councils

The principal challenges and barriers to implementation that: Teignbridge District Council anticipates facing are:-

- Funding
- Resources
- Time
- Number of stakeholders
- Method of applying for new grid capacity from National Grid
- A general increase in house building – there has been a fairly extensive increase in house building over the last few years and this is expected to continue in line with national priorities.

Progress on the following measures has been slower than expected due to:

- Local elections and change of members.
- Funding
- Resources

Table 2.2 – Progress on Measures to Improve Air Quality

2	Air Quality Action Plan	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	2023	Teignbridge District Council and Devon County Council, Local Town and Parish Councils	Local Authority and Devon County Council	NO	Partially Funded	£100k - £500k	Planning	Reduce Vehicle emissions	N/A	on going	Draft approved now to implement final version for approval.
4	Electric Vehicle Infrastructure and Ultra Low Emission Vehicle Policy	Policy Guidance and Development Control	Low Emissions Strategy	2020	2023	TDC	TDC and central government funding	NO	Not Funded	< £10k	Implementation	Reduce Vehicle emissions	N/A	ongoing	N/A
5	Workplace Travel Plan/Carbon Action Plan	Promoting Travel Alternatives	Low Emissions Strategy	2022	2030	TDC	Sec 106, Grants, Capital borrowing, maintenance and Grants	NO	Funded	£1 million - £10 million	Implementation	Net Zero 2030	Carbon Footprint	ongoing post tender	Securing Funding to deliver decarbonisation works at additional sites
1	TDC Ten Year Strategy - 2016 - 2025	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2016	2025	Teignbridge District Council	Local Authority	NO	Not Funded	< £10k	Planning	N/A	N/A	Ongoing	N/A
3	DELETTI Project (Electric Car Charging Points	Promoting Low Emission Transport	Low Emission Strategy	2019	2023	TDC, Local Transport Dept and neighbouring authorities	ERDF	YES	Partially Funded	£1 million - £10 million	Implementation	Reduce Vehicle emissions	Additional number of electric vehicle purchases	Implementation ongoing	First phase completed. Second phase bid also successful. Awaiting implementation.
6	Cycle Network	Alternatives to private vehicle use	Other		2024	TDC and Devon County Council	Future High Street Fund	YES	Partially Funded	£500k - £1 million	Planning		TDC Ten Year Strategy 2016 - 2925	ongoing	Subject to public consultation and funding approval.
7	Planning Applications	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2012	2028	TDC	TDC, DCC and Planning Applicants	NO	Partially Funded	£100k - £500k	Planning		Local Plan 2013 - 2033, Air Quality Technical Guidance (22)	ongoing	funding
8	On Street Residential Charging (ORCS)	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2021	2026	TDC & DCC	ERDF	NO	Partially Funded	£10k - 50k	Planning	Encourage Alternative Travel	N/A	ongoing	Subject to funding and approval.

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[6], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Public Health England's Public Health Outcomes Framework tool show that in Teignbridge in 2021 the fraction of mortality attributable to air pollution was 2.7%. This is well below the regional figure for the South West (4.6%) and below the national level of 5.8%. Teignbridge therefore has levels of particulate matter which are causing harm, but this problem is less severe than a significant number of other authorities. In fact, out of 295 authorities, Teignbridge sits in position 292 so only 3 other authorities with better values.

Teignbridge District Council has capacity for direct monitoring of $PM_{2.5}$ at three locations. Unfortunately, the data capture was less than 75% so all three sites had to be annualised. The results of 2023 data shows $PM_{2.5}$ concentrations of 10.1 µg/m3 at Bitton Park Road, 8.7 µg/m^3 at Alexandra Terrace and 6.2 µg/m^3 at Queen Street.

National modelling by PHE Public health profiles - OHID (phe.org.uk) suggests that for 2022 (most recent data available) the average figure for the District as a whole was 3.6 µg/m^3. The annual average EU limit value for $PM_{2.5}$ is 25 µg/m^3 so there is no suggestion that this level is being exceeded within Teignbridge. These levels also indicate that large parts Teignbridge will meet The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. These targets have an annual mean level of 10 µg/m^3 to be achieved by 2040.

[6] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

Although the above targets are for central Government Teignbridge still has a duty to reduce emissions of and exposure to $PM_{2.5}$. Also with regard to PM 2.5 in line with the Carbon Action Plan and Devon Carbon Plan, Teignbridge District Council has assessed it's vehicle operational needs and depot requirements to enable the decarbonisation of the fleet, including vans, waste and recycling collection vehicles.

Current plans are focused on BEV vehicles due to the maturity over other alternative ZEV technologies, such as hydrogen. Starting next year in 2024 a phased transition is proposed, based on the existing vehicle replacement cycle to mitigate any embodied carbon impacts of replacing vehicles mid-life, and reflecting the maturity of the EV market for different types of vehicles.

Although Teignbridge District Council is not a smoke free zone any complaints of smoke from bonfires or other sources i.e. wood burners will be investigated under our nuisance procedure and appropriate information provided or enforcement action undertaken where necessary.

Teignbridge District Council also have several permitted processes where the emissions of particulate matter are controlled via permit conditions. These include but are not limited to; re-spraying of road vehicles, mobile crushing processes, cement batching processes, animal carcass incineration, iron, steel and non-ferrous foundry processes, roadstone coating plant and wood waste incineration.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within 2023 by Teignbridge District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2019 and 2023 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Teignbridge District Council undertook (continuous) monitoring at 3 sites during 2023. Table A.1 in Appendix A shows the details of the automatic monitoring sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Teignbridge District Council undertook non- automatic (i.e., passive) monitoring of NO_2 at 44 sites during 2023. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g., annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2023 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Trend in Annual Mean No2 concentration 2019 – 2023 Teignmouth AQMA

The pollution tube results for the Teignmouth AQMA are covered in the above graphs 1 & 2 and it can be seen overall that the past 5 years levels are generally on the decrease. There is the one site (1 Reed Vale Lodge), that continually exceeds the National Objective. This site is on the peak of an uphill climb so is to be expected to be worse than the rest of the surrounding tubes. Consideration for this "hot spot" should be given when the AQAP is imminently revised.

The results still indicate that if a "do nothing" approach was taken with no intervention then it could be anticipated, based on the trajectory slide, that achievement of the National Objective within the next few years could be met.

Trend in Annual Mean No2 concentration 2019 – 2023 Newton Abbot & Kingsteignton AQMA

Due to the vast area of the boundary of the AQMA, it was not possible to group all tubes in one graph.

The pollution tubes results for the Newton Abbot & Kingsteignton AQMA are covered in graphs 3, 4, 5 & 6. Again, like the Teignmouth AQMA in 2022 there was only the one tube exceeding the National Objective. However, levels of this tube over the last 5 years have been very sporadic so it is difficult to draw significant conclusions at this time. Again, the overall trend in all of the tubes within the AQMA is down and at its current rate without intervention it is anticipated to meet the National Objectives within the next 3/4 years.

Trend in Annual Mean No2 concentrations 2019 – 2023 No AQMA

As expected, all of these tubes are well below the National Objective. Some of these tubes have been positioned for the justification that Teignbridge District Council's AQMA boundaries are correct. Each of these locations are not geographically linked but instead AQMA boundary linked.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

For the 2023 diffusion tubes the national bias adjusted figure has been used (0.81)

The data from 2023 shows that there was 1 location within Teignbridge District Council that exceeded the annual National Air Quality objective for Nitrogen Dioxide. This location was at Reed Vale Lodge, Bitton Park Road, Teignmouth and is within the Teignmouth Air Quality Management Area. This tube has exceeeded the national objectives for the past 5 years. Further monitoring around this location will be planned in 2024, A possible option for this road could be Roadvent and it is for that reason that further montioring around this area will take place in 2024. Over the past 5 years there has not been an annual mean greater than 60µg/m^3 which would indicate that no exceedance of the 1 hour mean is occuring.

It is still clear from the results that Teignbridge District Council has a few “hot spots” of pollution and these need to be addressed in the new Air Quality Action Plan. It is to be noted that all of these “hot spots” are within current AQMA’s.

Regular review of the monitoring locations takes place and there were no changes in the monitoring network between 2022 and 2023 but it is highly likely that due to the reasons listed above the monitoring network will change in 2024.

The latest annual mean concentrations of NO2 showed a decrease at sites from 2022 levels. This is highlighted in the figures below and the final column indicates the % change from the previous year. From the data all but two of the tubes have decreased.

ID	Site Name	Type	22 Annual Mean	23 Annual Mean	22-23 % Change
2	DP 155(153) Bitton Park Road, Teignmouth	Kerbside	29.2	26.8	-8.96%
3	9 Gestridge Rd, Kingsteignton	Kerbside	27.6	26.4	-4.55%
4	DP 85 Wolborough St, N Abbot	Kerbside	37.7	34.3	-9.91%
5	96 Bitton Park Rd, Teignmouth	Kerbside	35.0	33.6	-4.17%
6	157 Queen St, N Abbot	Kerbside	27.0	24.8	-8.87%
8	57 East St, Newton Abbot	Roadside	26.2	23.4	-11.97%
9	Forde House Offices, N Abbot	Kerbside	10.8	10.6	-1.89%
11	12 Torquay Rd, Newton Abbot	Kerbside	24.8	23.5	-5.53%
13	22 Courtenay Road, N Abbot	Kerbside	6.5	5.6	-16.07%
15	38 Ashburton Road	Roadside	21.6	21.6	0.00%
21	Jetty Marsh Rd lamp post no. 28 Westward traffic flow	Roadside	31.7	30.3	-4.62%
22	Jetty Marsh Rd lamp post no. 29 Eastward traffic flow	Roadside	30.9	27.8	-11.15%
23	108-110 Queen St First Floor level Newton Abbot	Kerbside	28.4	24.8	-14.52%

ID	Site Name	Type	22 Annual Mean	23 Annual Mean	22-23 % Change
24	87 East St, Newton Abbot	Kerbside	32.6	29.3	-11.26%
25	DP 7 Station Rd, Newton Abbot	Roadside	28.5	26.8	-6.34%
26	Elm Rd/New link Rd, Dawlish	Roadside	5.3	5.0	-6.00%
27	DP 173 Bitton Park Rd, Teignmouth	Kerbside	31.1	30.5	-1.97%
31	DP 108-110 Queen St, Newton Abbot	Kerbside	27.7	26.0	-6.54%
32	21 Oakford, Broadway Rd, Kingsteignton	Kerbside	18.5	17.6	-5.11%
33	DP 30-34 Bradley Court, Highweek Street NA	Kerbside	32.8	31.5	-4.13%
34	Nox Analyser, Halcyon Road, Newton Abbot	Kerbside	20.5	18.7	-9.63%
37	Telegraph pole Ringslade, Highweek	Kerbside	15.3	12.7	-20.47%
38	DP 26 Newton Road, Kingsteignton	Roadside	25.4	23.6	-7.63%
40	Exeter Road, Newton Abbot	Roadside	**42.1**	36.6	-15.03%
42	Lay By Exeter Rd (opp Vauxhall Garage) Whitehill N Abbot	Kerbside	21.3	19.2	-10.94%
47	DP 114 Bitton Park Rd, Teignmouth	Kerbside	20.4	18.8	-8.51%
48	DP 1 Reed Vale Lodge, Teignmouth	Kerbside	**45.3**	**41.9**	-8.11%
49	DP 68 Bitton Park Rd, Teignmouth	Kerbside	37.0	35.5	-4.23%
52	DP 29 Vicarage Hill, Kingsteignton (Blindwell)	Roadside	31.5	28.0	-12.50%
53	90 Wolborough Street Newton Abbot	Kerbside	32.9	32.1	-2.49%
54	DP 3 Gestridge Road, Kingsteignton	Kerbside	26.1	24.6	-6.10%
55	DP 79 Wolborough St, Newton Abbot	Kerbside	37.2	33.9	-9.73%
57	West Golds Way Newton Abbot	Roadside	9.8	9.6	-2.08%
60	Nox Analyser - Bitton Park Road, Teignmouth	Other	17.9	16.1	-11.18%
64	Telegraph Pole, 22 Gestridge Road, Kingsteignton	Kerbside	15.6	13.2	-18.18%
65	96 Wolborough St, Newton Abbot	Kerbside	21.9	19.4	-12.89%
68	Shorland Hse, Elm Grove Rd	Kerbside	9.3	10.6	12.26%
73	LP 132 Ashburton Rd NA	Roadside	18.4	16.5	-11.52%
74	LP 15 Ashburton Rd NA	Roadside	32.9	30.7	-7.17%
75	LP Moorgate Vets, Btracey	Kerbside	14.2	12.4	-14.52%
76	LP Bovey Dental, B Tracey	Kerbside	16.4	15.2	-7.89%
77	LP no.9 Bitton Pk Rd, Teignmth	Kerbside	26.6	27.3	2.56%
78	LP no.8 Bitton Pk Rd, Teignmth	Kerbside	29.4	23.5	-25.11%
79	LP no.6 Golden Crown Curry, Bitton Pk Rd, Teignmth	Kerbside	24.0	23.2	-3.45%

The general trend in all the monitoring data is a signficiant fall in concentrations within the past few years and has shown long term improvement with Teignbridge District Council.

3.2.2 Particulate Matter (PM_{10})

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

PM_{10} monitoring took place at 3 locations within the district: -

- Queen Street, Newton Abbot
- Alexandra Terrace, Teignmouth
- Bitton Park Road, Teignmouth

The annual mean for the locations were as follows: -

- Queen Street, Newton Abbot – 14.1 µg/m^3 (Annualised)
- Alexandra Terrace, Teignmouth – 14.1 µg/m^3 (Annualised)
- Bitton Park Road, Teignmouth – 17.8 µg/m^3 (Annualised)

There were no exceedances of the Annual Mean for PM_{10}

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

$PM_{2.5}$ monitoring took place at 3 locations within the District:-

- Queen Street, Newton Abbot
- Alexandra Terrace, Teignmouth
- Bitton Park Road, Teignmouth

The annual mean for the locations were as follows:-

- Queen Street, Newton Abbot – 6.9 µg/m^3 (Annualised)
- Alexandra Terrace, Teignmouth – 8.7 µg/m^3 (Annualised)
- Bitton Park Road, Teignmouth – 10.1 µg/m^3 (Annualised)

Whilst these levels are essentially indicative this data does provide a good indication of levels of $PM_{2.5}$. The levels from 2023 were similar to those monitored in 2022.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM4	Queen Street Newton Abbot	Roadside	286617	71332	PM10 & PM2.5	YES, Newton Abbot	Light scattering technique	2.2	2.6	3.7
CM9	Alexandra Terrace, Teignmouth	Roadside	293658	72979	PM10 & PM2.5	NO	Light scattering technique	50	2	3.7
CM10	Bitton Park Road, Teignmouth	Roadside	293391	73102	PM10 & PM2.5	YES, Teignmouth	Light scattering technique	1	1	3.7
GB0013R	Yarner Wood	Rural Background	278611	78949	PM10, PM2.5 & NO2	NO	Light scattering technique	N/A	N/A	2.9

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable

Table A.2 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
2	DP 155(153) Bitton Park Road, Teignmouth	Kerbside	293277	73095	NO2	YES. Teignmouth.	0.0	1.0	No	1.7
3	9 Gestridge Rd, Kingsteignton	Kerbside	286967	73146	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
4	DP 85 Wolborough St, N Abbot	Kerbside	285526	71010	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
5	96 Bitton Park Rd, Teignmouth	Kerbside	293387	73101	NO2	YES. Teignmouth.	0.0	1.0	No	1.7
6	157 Queen St, N Abbot	Kerbside	286630	71329	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
8	57 East St, Newton Abbot	Roadside	285991	71158	NO2	YES. Newton Abbot & Kingsteignton.	1m	5.0	No	1.7
9	Forde House Offices, N Abbot	Kerbside	287073	70915	NO2	NO.	0.0	n/a	No	1.7
11	12 Torquay Rd, Newton Abbot	Kerbside	286345	71078	NO2	YES. Newton Abbot & Kingsteignton.	n/a	1.0	No	N/A
13	22 Courtenay Road, N Abbot	Kerbside	286061	70812	NO2	NO.	24.0	1.0	No	1.7
15	38 Ashburton Road	Roadside	275659	69917	NO2	NO.	2.0	2.0	No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
21	Jetty Marsh Rd lamp post no. 28 Westward traffic flow	Roadside	286056	71334	NO2	YES. Newton Abbot & Kingsteignton.	2.0	1.0	No	1.7
22	Jetty Marsh Rd lamp post no. 29 Eastward traffic flow	Roadside	297737	81748	NO2	YES. Newton Abbot & Kingsteignton.	2.0	1.0	No	1.7
23	108-110 Queen St First Floor level Newton Abbot	Kerbside	286519	71344	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	4.0
24	87 East St, Newton Abbot	Kerbside	286061	71151	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
25	DP 7 Station Rd, Newton Abbot	Roadside	286703	70922	NO2	YES. Newton Abbot & Kingsteignton.	0.0	4.0	No	1.7
26	Elm Rd/New link Rd, Dawlish	Roadside	296175	77738	NO2	NO.	0.0	1.0	No	1.7
27	DP 173 Bitton Park Rd, Teignmouth	Kerbside	293231	73085	NO2	YES. Teignmouth.	0.0	1.0	No	1.7
31	DP 108-110 Queen St, Newton Abbot	Kerbside	286517	71336	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
32	21 Oakford, Broadway Rd, Kingsteignton	Kerbside	286957	73112	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
33	DP 30-34 Bradley Court, Highweek Street NA	Kerbside	285624	71418	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
34	Nox Analyser, Halcyon Road, Newton Abbot	Kerbside	285675	71393	NO2	YES. Newton Abbot & Kingsteignton.	0.0	n/a	No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
37	Telegraph pole Ringslade, Highweek	Kerbside	284851	72101	NO2	NO.	0.0	1.0	No	1.7
38	DP 26 Newton Road, Kingsteignton	Roadside	286757	72583	NO2	YES. Newton Abbot & Kingsteignton.	2.0	5.0	No	1.7
40	Exeter Road, Newton Abbot	Roadside	286987	73148	NO2	YES. Newton Abbot & Kingsteignton.	5.0	1.0	No	1.7
42	Lay By Exeter Rd (opp Vauxhall Garage) Whitehill N Abbot	Kerbside	285477	72510	NO2	NO.	n/a	1.0	No	1.7
47	DP 114 Bitton Park Rd, Teignmouth	Kerbside	293256	73109	NO2	YES. Teignmouth.	0.0	1.0	No	1.7
48	DP 1 Reed Vale Lodge, Teignmouth	Kerbside	293446	73091	NO2	YES. Teignmouth.	0.0	1.0	No	1.7
49	DP 68 Bitton Park Rd, Teignmouth	Kerbside	293541	73083	NO2	YES. Teignmouth.	0.0	11.0	No	1.7
52	DP 29 Vicarage Hill, Kingsteignton (Blindwell)	Roadside	287544	73067	NO2	NO.	2.0	5.0	No	2.0
53	90 Wolborough Street Newton Abbot	Kerbside	285537	71035	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	2.0
54	DP 3 Gestridge Road, Kingsteignton	Kerbside	286969	73130	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
55	DP 79 Wolborough St, Newton Abbot	Kerbside	285554	71043	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
57	West Golds Way Newton Abbot	Roadside	297724	81743	NO2	NO.	1.0	1.0	No	1.7
60	Nox Analyser - Bitton Park Road, Teignmouth	Other	293363	73094	NO2	YES. Teignmouth.	0.0	n/a	No	1.7
64	Telegraph Pole, 22 Gestridge Road, Kingsteignton	Kerbside	286985	73111	NO2	NO.	0.0	1.0	No	1.7
65	96 Wolborough St, Newton Abbot	Kerbside	285518	71018	NO2	YES. Newton Abbot & Kingsteignton.	0.0	1.0	No	1.7
68	Shorland Hse, Elm Grove Rd	Kerbside	296485	77134	NO2	NO.	0.0	1.0	No	1.7
73	LP 132 Ashburton Rd NA	Roadside	283828	71993	NO2	NO.	3.0	2.0	No	1.7
74	LP 15 Ashburton Rd NA	Roadside	285219	71616	NO2	NO.	0.0	2.0	No	1.7
75	LP Moorgate Vets, Btracey	Kerbside	281149	78302	NO2	NO.	22.0	2.0	No	1.7
76	LP Bovey Dental, B Tracey	Kerbside	281529	78389	NO2	NO.	7.5	1.2	No	1.7
77	LP no.9 Bitton Pk Rd, Teignmth	Kerbside	293451	73081	NO2	YES. Teignmouth.	1.0	1.0	No	1.7
78	LP no.8 Bitton Pk Rd, Teignmth	Kerbside	293473	73076	NO2	YES. Teignmouth.	1.0	1.0	No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
79	LP no.6 Golden Crown Curry, Bitton Pk Rd, Teignmouth	Kerbside	293354	73109	NO2	YES. Teignmouth.	2.0	1.0	No	1.7

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
GB0013R	278611	78949	Rural Background	96.92	96.92	3.5	2.3	3.0	2.7	2.1

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction.**

☒ **Where exceedances of the NO_2 annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2023.**

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2023 (%)	2019	2020	2021	2022	2023
2	293277	73095	Kerbside	100	100.0	33.2	28.6	28.5	29.2	26.8
3	286967	73146	Kerbside	100	100.0	35.3	30.5	31.5	27.6	26.4
4	285526	71010	Kerbside	100	100.0	**42.8**	35.6	**40.1**	37.7	34.3
5	293387	73101	Kerbside	83.33	82.7	**40.3**	34.5	35.2	35.0	33.6
6	286630	71329	Kerbside	100	100.0	31.1	24.5	27.6	27.0	24.8
8	285991	71158	Roadside	100	100.0	31.1	23.9	26.7	26.2	23.4
9	287073	70915	Kerbside	91.67	90.4	14.2	10.4	11.7	10.8	10.6
11	286345	71078	Kerbside	91.67	90.4	32.3	25.1	28.0	24.8	23.5
13	286061	70812	Kerbside	100	100.0	8.1	6.2	6.5	6.5	5.6
15	275659	69917	Roadside	83.33	84.6	25.7	22.3	21.6	21.6	21.6
21	286056	71334	Roadside	100	100.0	37.3	26.1	34.2	31.7	30.3
22	297737	81748	Roadside	91.67	90.4	35.4	26.4	31.2	30.9	27.8
23	286519	71344	Kerbside	100	100.0	32.1	25.8	28.3	28.4	24.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2023 (%)	2019	2020	2021	2022	2023
24	286061	71151	Kerbside	100	100.0	39.6	29.6	32.1	32.6	29.3
25	286703	70922	Roadside	100	100.0	34.1	27.2	29.0	28.5	26.8
26	296175	77738	Roadside	83.33	82.7	6.6	5.8	6.0	5.3	5.0
27	293231	73085	Kerbside	83.33	80.8	38.3	32.5	31.2	31.1	30.5
31	286517	71336	Kerbside	100	100.0	33.6	25.8	28.5	27.7	26.0
32	286957	73112	Kerbside	100	100.0	24.2	19.1	18.4	18.5	17.6
33	285624	71418	Kerbside	100	100.0	**40.2**	27.6	31.8	32.8	31.5
34	285675	71393	Kerbside	100	100.0	25.2	18.4	20.6	20.5	18.7
37	284851	72101	Kerbside	100	100.0	16.1	14.0	16.1	15.3	12.7
38	286757	72583	Roadside	91.67	90.4	31.6	23.8	25.8	25.4	23.6
40	286987	73148	Roadside	100	100.0	**51.9**	37.4	**43.7**	**42.1**	36.6
42	285477	72510	Kerbside	100	100.0	23.9	17.6	20.7	21.3	19.2
47	293256	73109	Kerbside	100	100.0	23.4	18.9	20.9	20.4	18.8
48	293446	73091	Kerbside	91.67	92.3	**54.9**	**47.0**	**47.0**	**45.3**	**41.9**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2023 (%)	2019	2020	2021	2022	2023
49	293541	73083	Kerbside	91.67	92.3	**43.8**	37.0	39.3	37.0	35.5
52	287544	73067	Roadside	91.67	90.4	34.3	28.0	31.5	31.5	28.0
53	285537	71035	Kerbside	100	100.0	39.2	32.0	32.6	32.9	32.1
54	286969	73130	Kerbside	100	100.0	34.1	26.2	28.1	26.1	24.6
55	285554	71043	Kerbside	100	100.0	**43.6**	35.2	37.9	37.2	33.9
57	297724	81743	Roadside	100	100.0	12.6	9.4	10.3	9.8	9.6
60	293363	73094	Other	100	100.0	21.2	16.3	17.8	17.9	16.1
64	286985	73111	Kerbside	100	100.0	18.2	14.6	16.4	15.6	13.2
65	285518	71018	Kerbside	100	100.0	28.5	22.5	24.1	21.9	19.4
68	296485	77134	Kerbside	41.67	40.4	13.0	9.3	11.6	9.3	10.6
73	283828	71993	Roadside	83.33	82.7	-	10.3	16.9	18.4	16.5
74	285219	71616	Roadside	100	100.0	-	9.5	34.4	32.9	30.7
75	281149	78302	Kerbside	91.67	92.3	-	12.8	13.7	14.2	12.4
76	281529	78389	Kerbside	100	100.0	-	22.0	15.9	16.4	15.2

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2023 (%)	2019	2020	2021	2022	2023
77	293451	73081	Kerbside	75	73.1	-	26.9	26.5	26.6	27.3
78	293473	73076	Kerbside	66.67	65.4	-	13.3	28.1	29.4	23.5
79	293354	73109	Kerbside	91.67	92.3	-	15.5	24.2	24.0	23.2

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **Diffusion tube data has been bias adjusted.**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.**

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

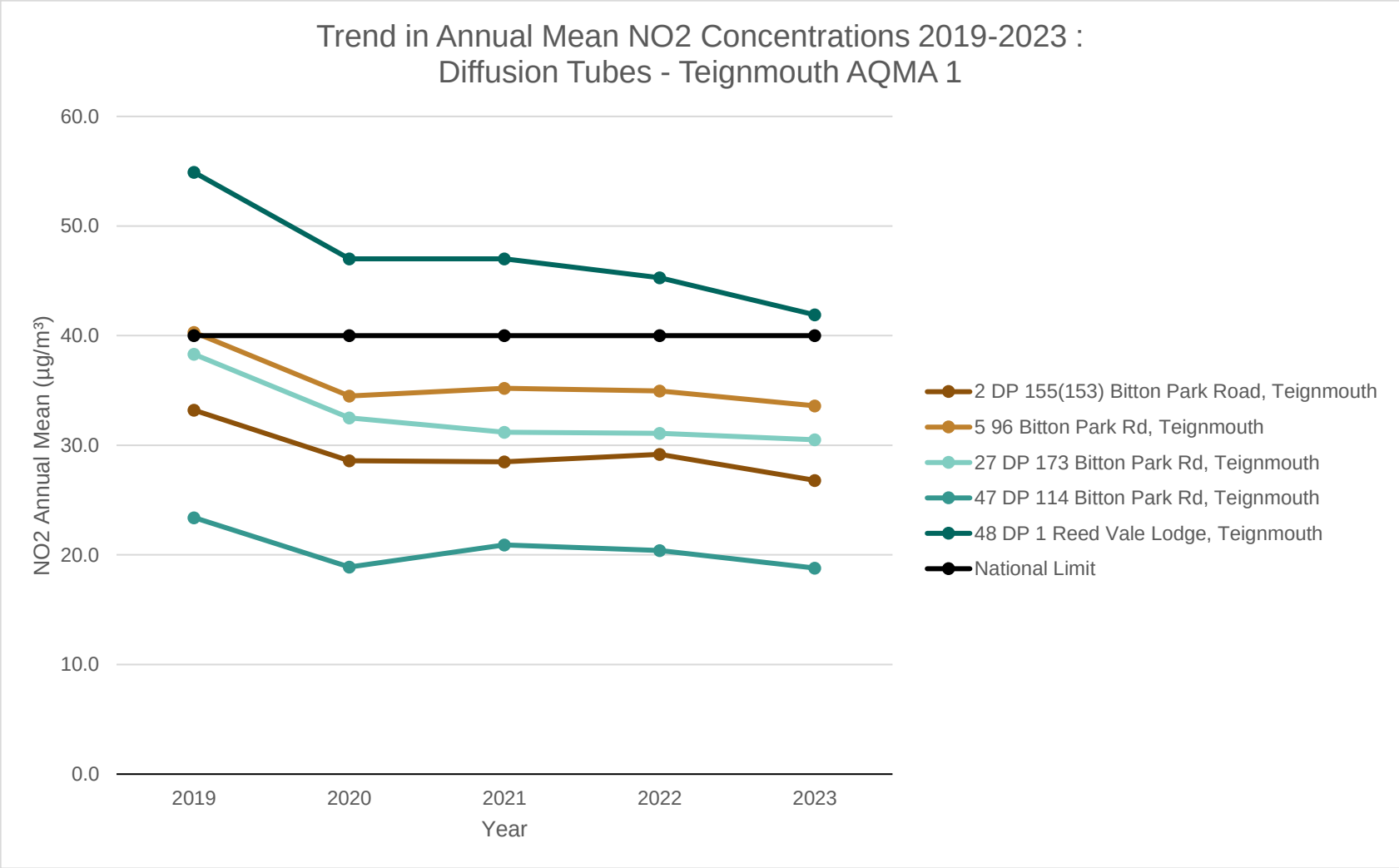
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

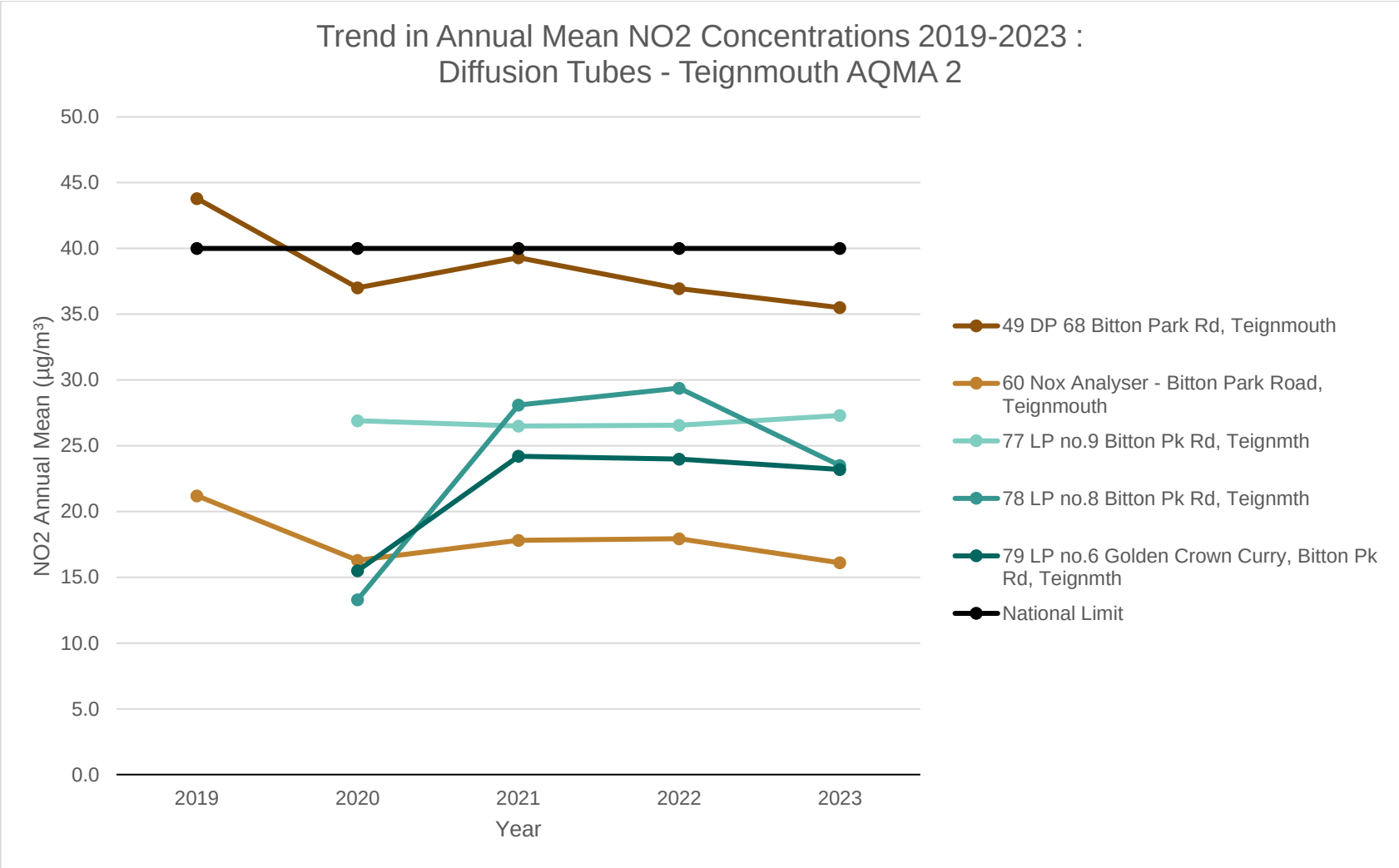
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

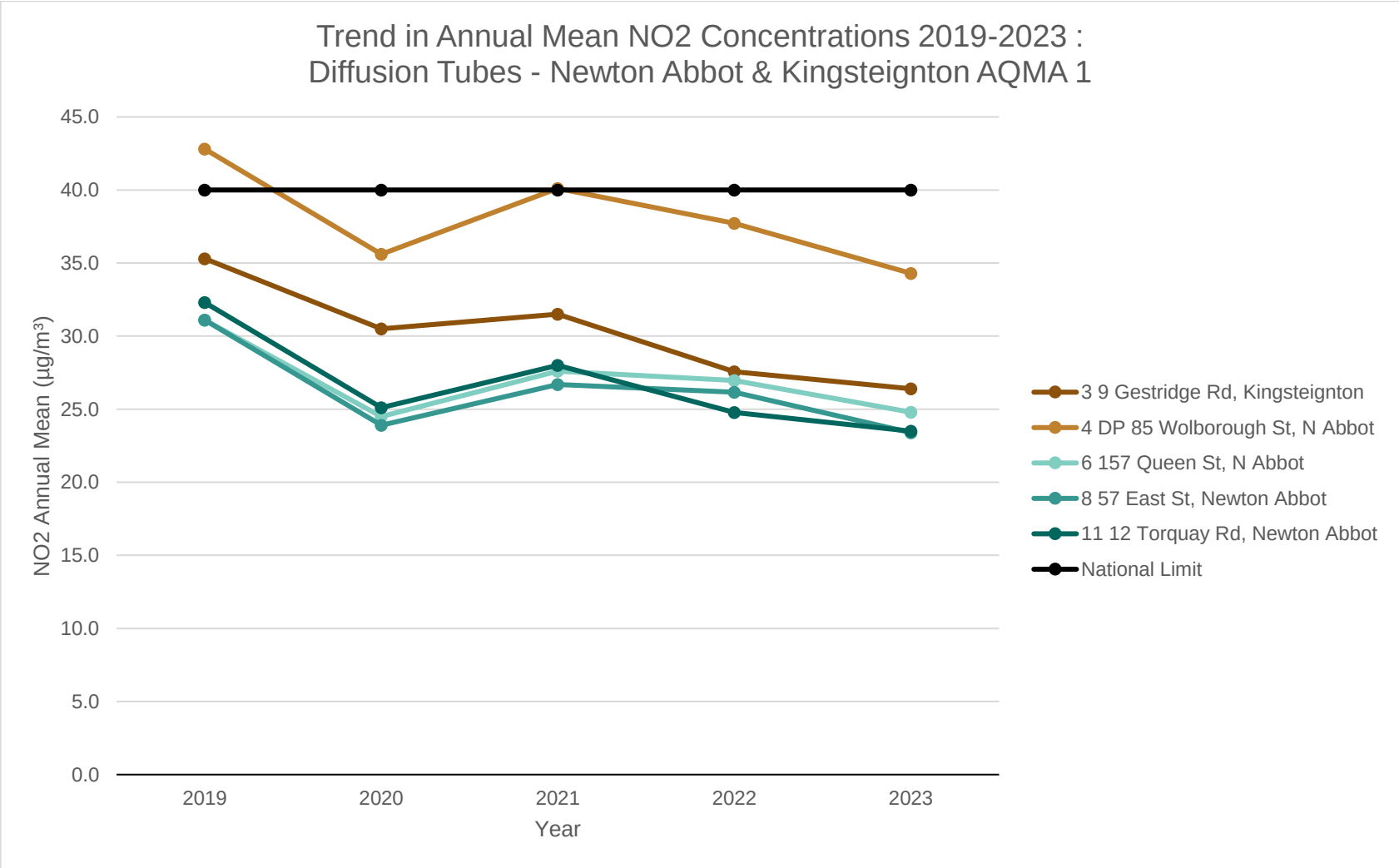
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

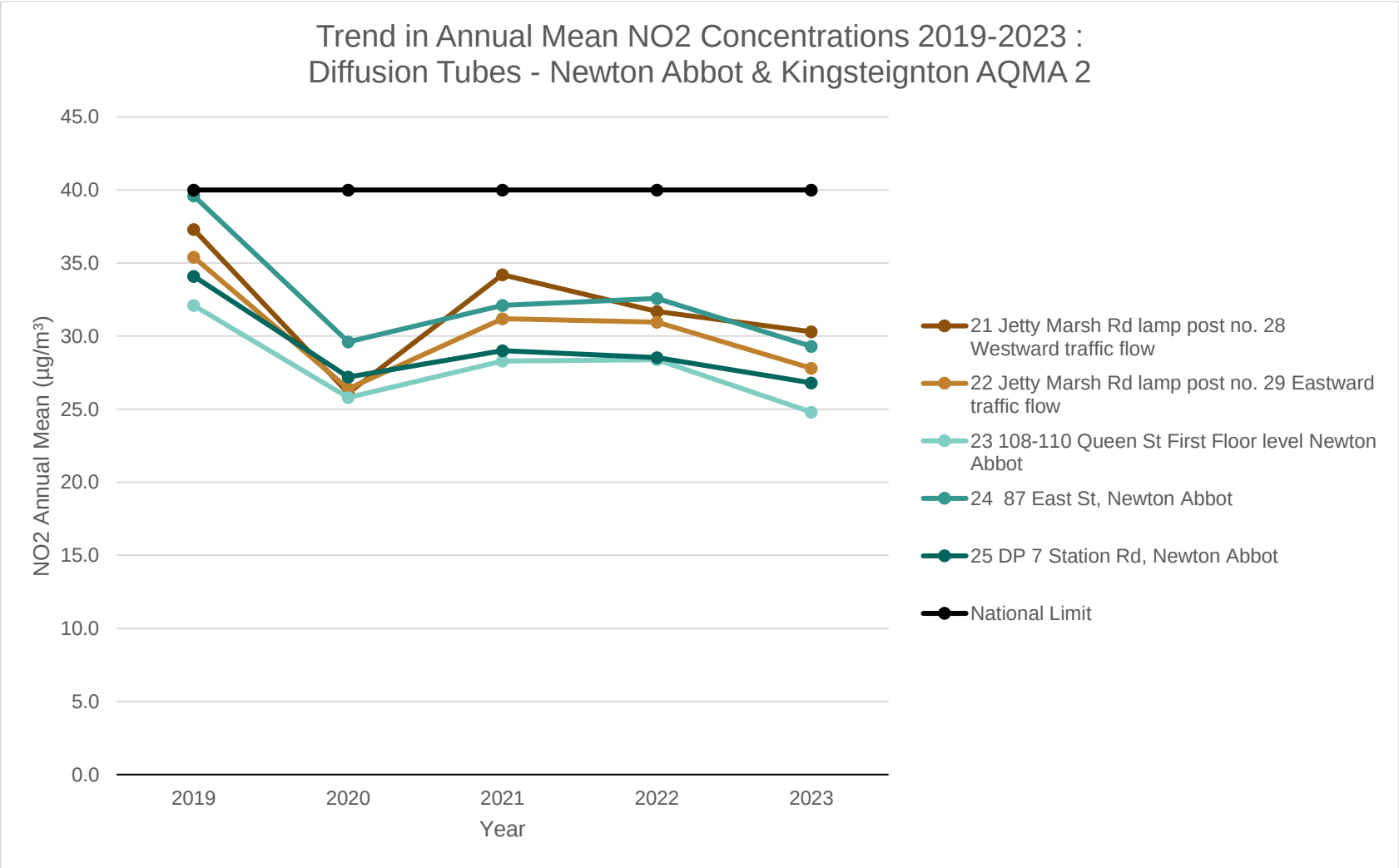
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

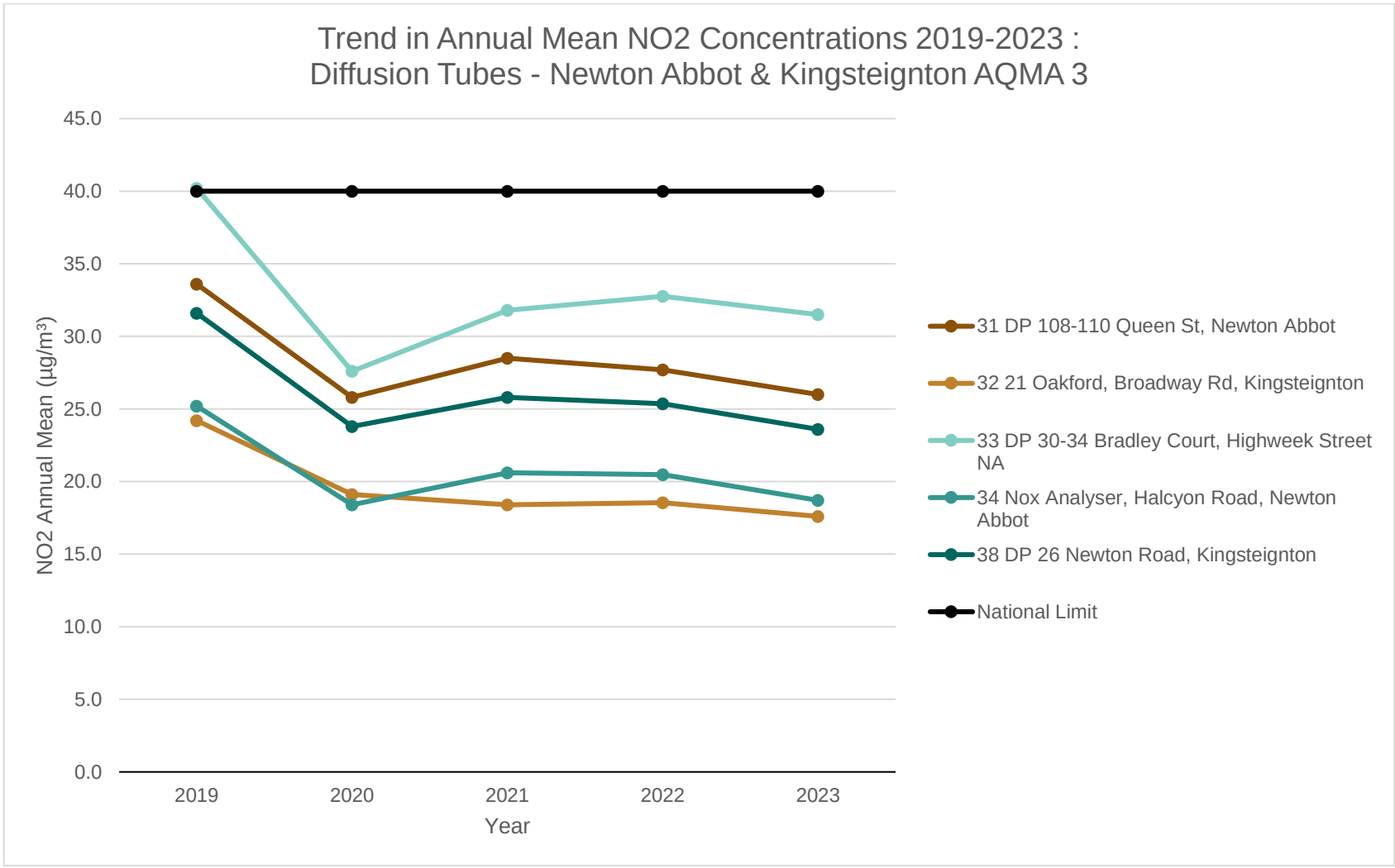
Figure A.1 – Trends in Annual Mean NO_2 Concentrations

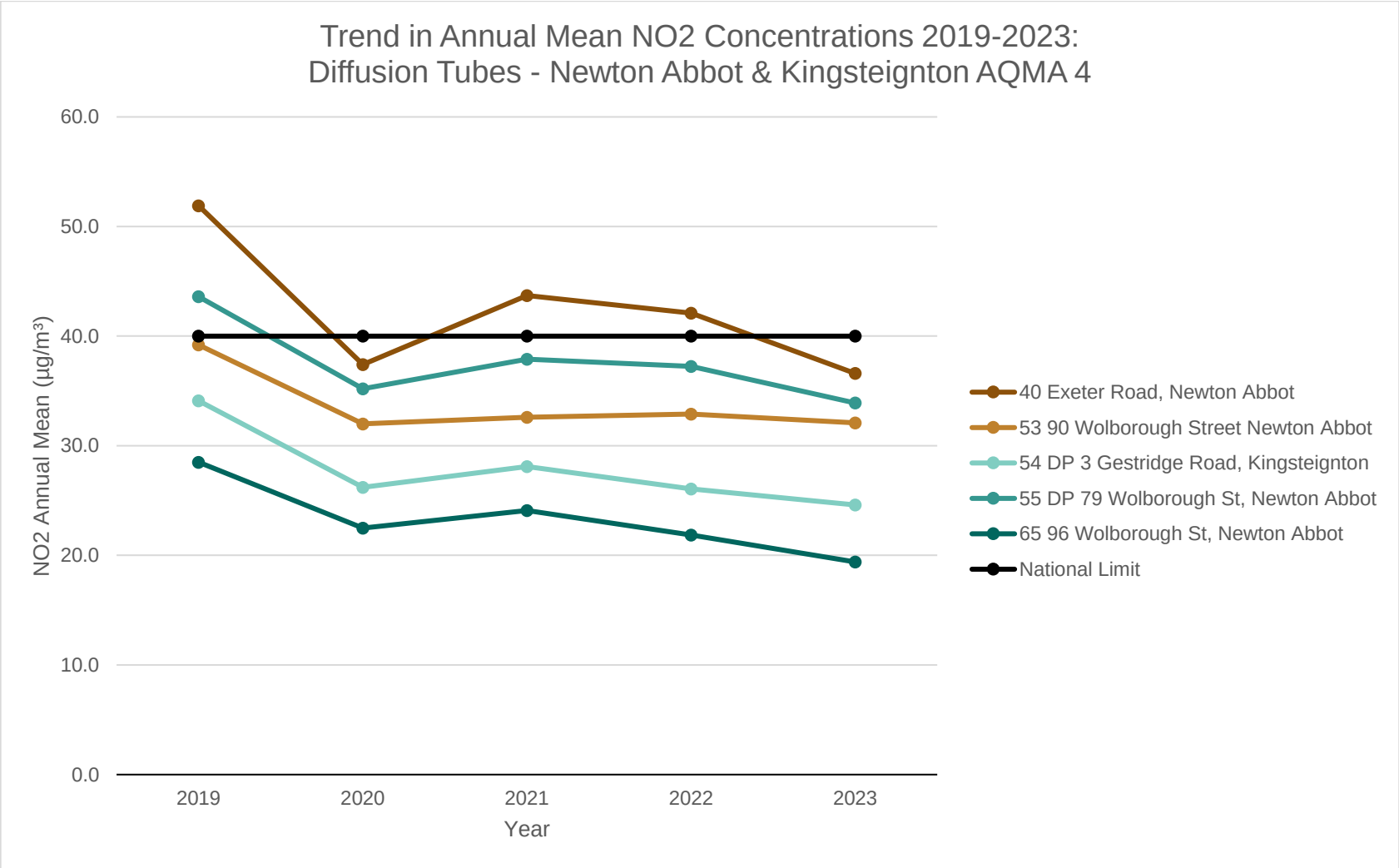


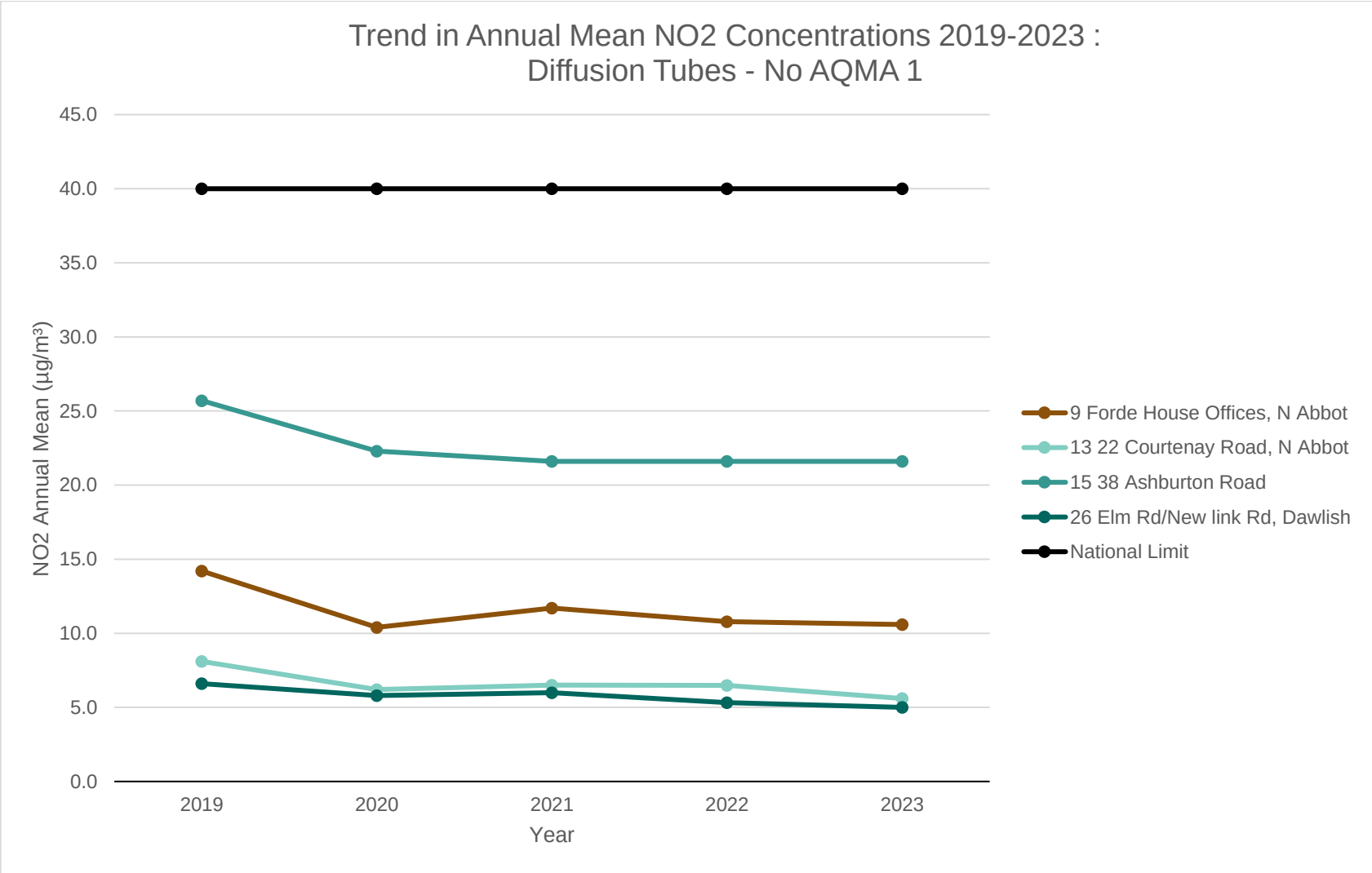

Trend in Annual Mean NO2 Concentrations 2019-2023 : Diffusion Tubes - Teignmouth AQMA 2
NO2 Annual Mean (µg/m³)
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
49 DP 68 Bitton Park Rd, Teignmouth
60 Nox Analyser - Bitton Park Road, Teignmouth
77 LP no.9 Bitton Pk Rd, Teignmth
78 LP no.8 Bitton Pk Rd, Teignmth
79 LP no.6 Golden Crown Curry, Bitton Pk Rd, Teignmth
National Limit

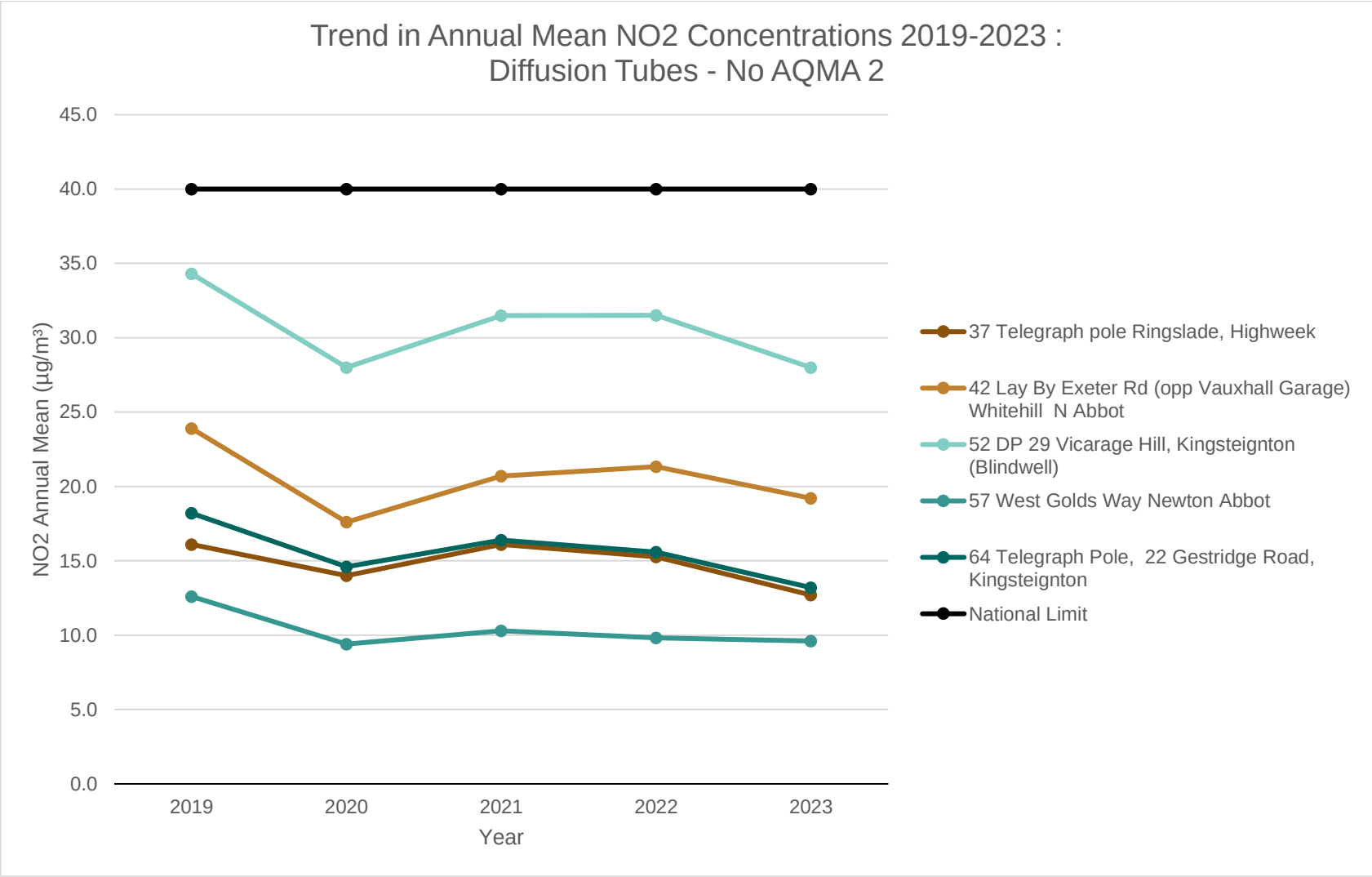

Trend in Annual Mean NO2 Concentrations 2019-2023 :
Diffusion Tubes - Newton Abbot & Kingsteignton AQMA 1
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
3 9 Gestridge Rd, Kingsteignton
4 DP 85 Wolborough St, N Abbot
6 157 Queen St, N Abbot
8 57 East St, Newton Abbot
11 12 Torquay Rd, Newton Abbot
National Limit

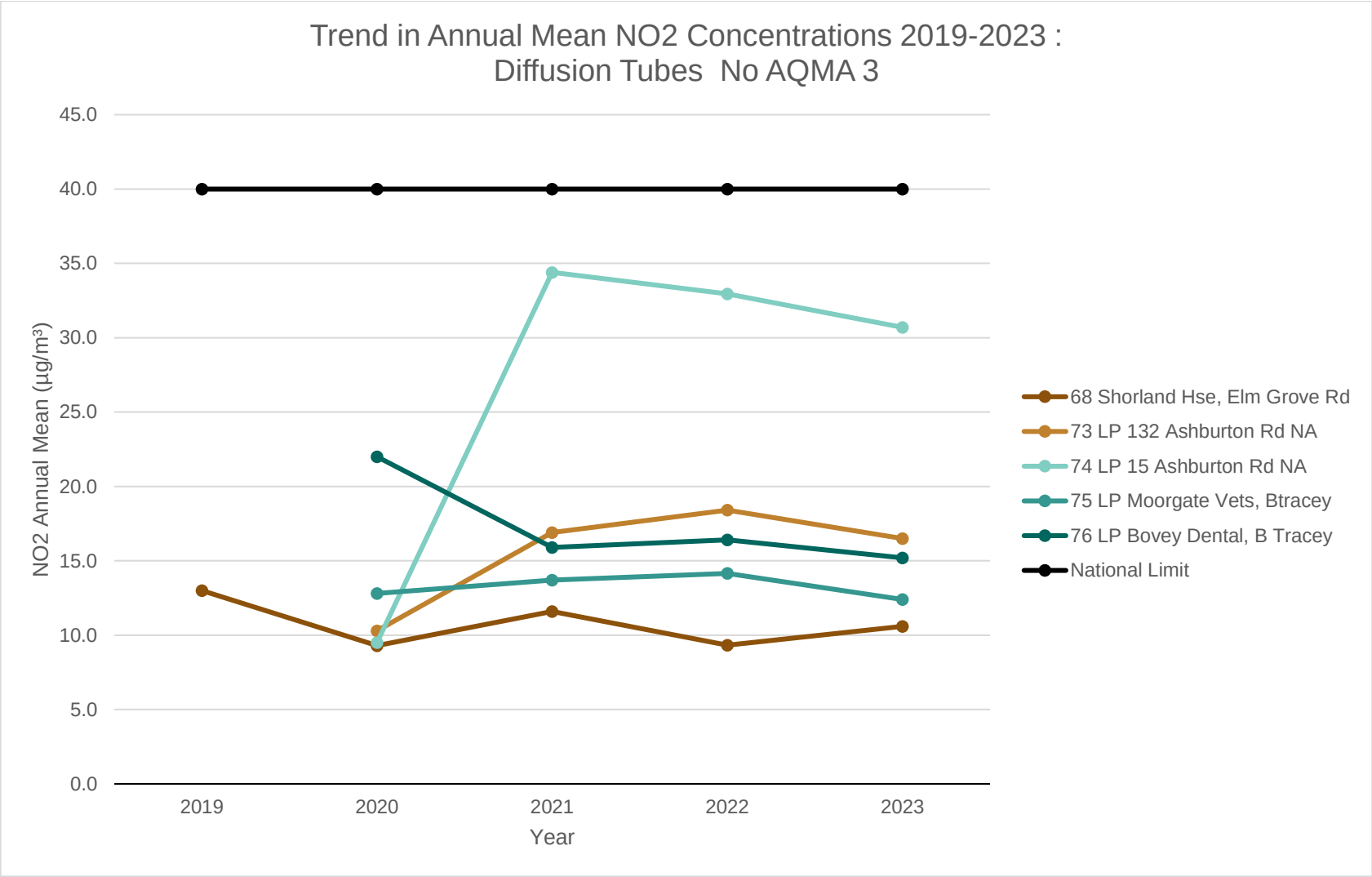

Trend in Annual Mean NO2 Concentrations 2019-2023 :
Diffusion Tubes - Newton Abbot & Kingsteignton AQMA 2
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
21 Jetty Marsh Rd lamp post no. 28 Westward traffic flow
22 Jetty Marsh Rd lamp post no. 29 Eastward traffic flow
23 108-110 Queen St First Floor level Newton Abbot
24 87 East St, Newton Abbot
25 DP 7 Station Rd, Newton Abbot
National Limit


Trend in Annual Mean NO2 Concentrations 2019-2023 :
Diffusion Tubes - Newton Abbot & Kingsteignton AQMA 3
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
31 DP 108-110 Queen St, Newton Abbot
32 21 Oakford, Broadway Rd, Kingsteignton
33 DP 30-34 Bradley Court, Highweek Street NA
34 Nox Analyser, Halcyon Road, Newton Abbot
38 DP 26 Newton Road, Kingsteignton
National Limit


Trend in Annual Mean NO2 Concentrations 2019-2023:
Diffusion Tubes - Newton Abbot & Kingsteignton AQMA 4
NO2 Annual Mean (µg/m³)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
2019
2020
2021
2022
2023
Year
40 Exeter Road, Newton Abbot
53 90 Wolborough Street Newton Abbot
54 DP 3 Gestridge Road, Kingsteignton
55 DP 79 Wolborough St, Newton Abbot
65 96 Wolborough St, Newton Abbot
National Limit


Trend in Annual Mean NO2 Concentrations 2019-2023 : Diffusion Tubes - No AQMA 1
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
9 Forde House Offices, N Abbot
13 22 Courtenay Road, N Abbot
15 38 Ashburton Road
26 Elm Rd/New link Rd, Dawlish
National Limit


Trend in Annual Mean NO2 Concentrations 2019-2023 : Diffusion Tubes - No AQMA 2
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
37 Telegraph pole Ringslade, Highweek
42 Lay By Exeter Rd (opp Vauxhall Garage) Whitehill N Abbot
52 DP 29 Vicarage Hill, Kingsteignton (Blindwell)
57 West Golds Way Newton Abbot
64 Telegraph Pole, 22 Gestridge Road, Kingsteignton
National Limit


Trend in Annual Mean NO2 Concentrations 2019-2023 :
Diffusion Tubes No AQMA 3
NO2 Annual Mean (µg/m³)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2019
2020
2021
2022
2023
Year
68 Shorland Hse, Elm Grove Rd
73 LP 132 Ashburton Rd NA
74 LP 15 Ashburton Rd NA
75 LP Moorgate Vets, Btracey
76 LP Bovey Dental, B Tracey
National Limit

Trend in Annual Mean No2 concentration 2019 – 2023 Teignmouth AQMA

The pollution tube results for the Teignmouth AQMA are covered in the above graphs 1 & 2 and it can be seen overall that the past 5 years levels are generally on the decrease. There is the one site (1 Reed Vale Lodge), that continually exceeds the National Objective. This site is on the peak of an uphill climb so is to be expected to be worse than the rest of the surrounding tubes. Consideration for this "hot spot" should be given when the AQAP is imminently revised.

The results still indicate that if a "do nothing" approach was taken with no intervention then it could be anticipated, based on the trajectory slide, that achievement of the National Objective within the next few years could be met.

Trend in Annual Mean No2 concentration 2019 – 2023 Newton Abbot & Kingsteignton AQMA

Due to the vast area of the boundary of the AQMA, it was not possible to group all tubes in one graph.

The pollution tubes results for the Newton Abbot & Kingsteignton AQMA are covered in graphs 3, 4, 5 & 6. Again, like the Teignmouth AQMA in 2022 there was only the one tube exceeding the National Objective. However, levels of this tube over the last 5 years have been very sporadic so it is difficult to draw significant conclusions at this time. Again, the overall trend in all of the tubes within the AQMA is down and at its current rate without intervention it is anticipated to meet the National Objectives within the next 3/4 years.

Trend in Annual Mean No2 concentrations 2019 – 2023 No AQMA

As expected, all of these tubes are well below the National Objective. Some of these tubes have been positioned for the justification that Teignbridge District Council's AQMA boundaries are correct. Each of these locations are not geographically linked but instead AQMA boundary linked.

Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM2	293363	73094	Roadside	Not Monitored	Not Monitored	0	0	No Data	No Data	No Data
GB0013R	278611	78949	Rural Background	96.92	96.92	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m^3 have been recorded.

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.2 – Trends in Number of NO_2 1-Hour Means > 200µg/m^3

No trend graph has been produced as monitoring has ceased at this location.

Table A.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM4	286617	71332	Roadside	85.22	71.01	11.91	12.2	10.7	15.8	14.1
CM9	293658	72979	Roadside	98.21	73.66	**Not Installed**	7.3	10.7	14.6	14.1
CM10	293391	73102	Roadside	98.21	73.66	**Not Installed**	8.3	9.2	12.6	17.8
GB0013R	278611	78949	Rural Background	99.22	99.22	**Not Installed**	**Not Installed**	**Not Installed**	10.0	8.4

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

Notes:

The annual mean concentrations are presented as µg/m^3.

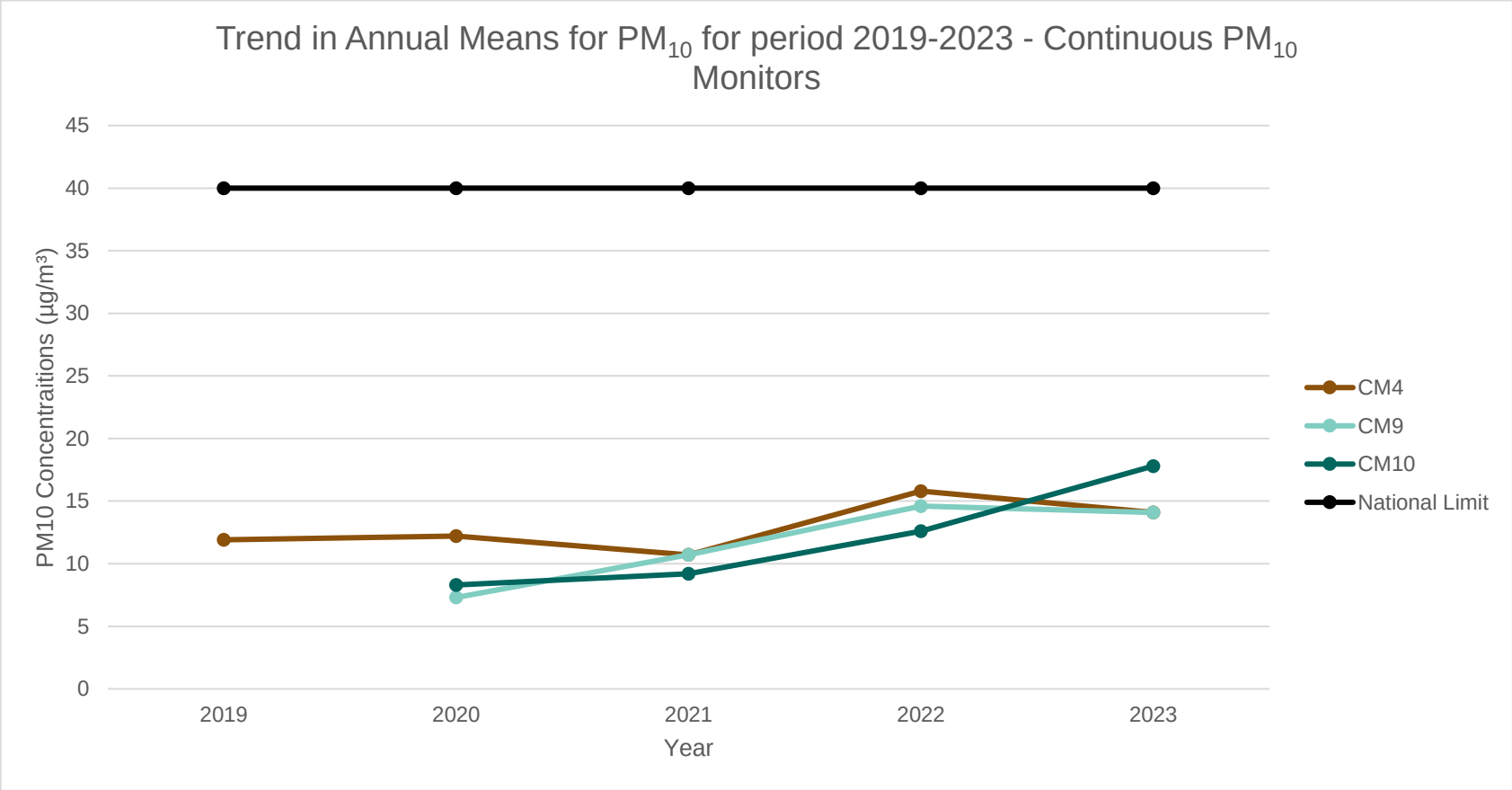
Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold**.

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.3 – Trends in Annual Mean PM_{10} Concentrations



Trend in Annual Mean PM_{10} concentrations 2019 – 2023

Although the above graph shows the annual mean levels on the increase the levels still do not indicate exceedance of the National Objective.

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM4	286617	71332	Roadside	85.22	71.01	**No Data**	0	1	2	0 (23.1)
CM9	293658	72979	Roadside	98.21	73.66	**Not Installed**	0	2	1	2 (24.5)
CM10	293391	73102	Roadside	98.21	73.66	**Not Installed**	0	1	6	1 (27.4)
GB0013R	278611	78949	Rural Background	99.22	99.22	**Not Installed**	**Not Installed**	**Not Installed**	0 (14.4)	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m^3 have been recorded.

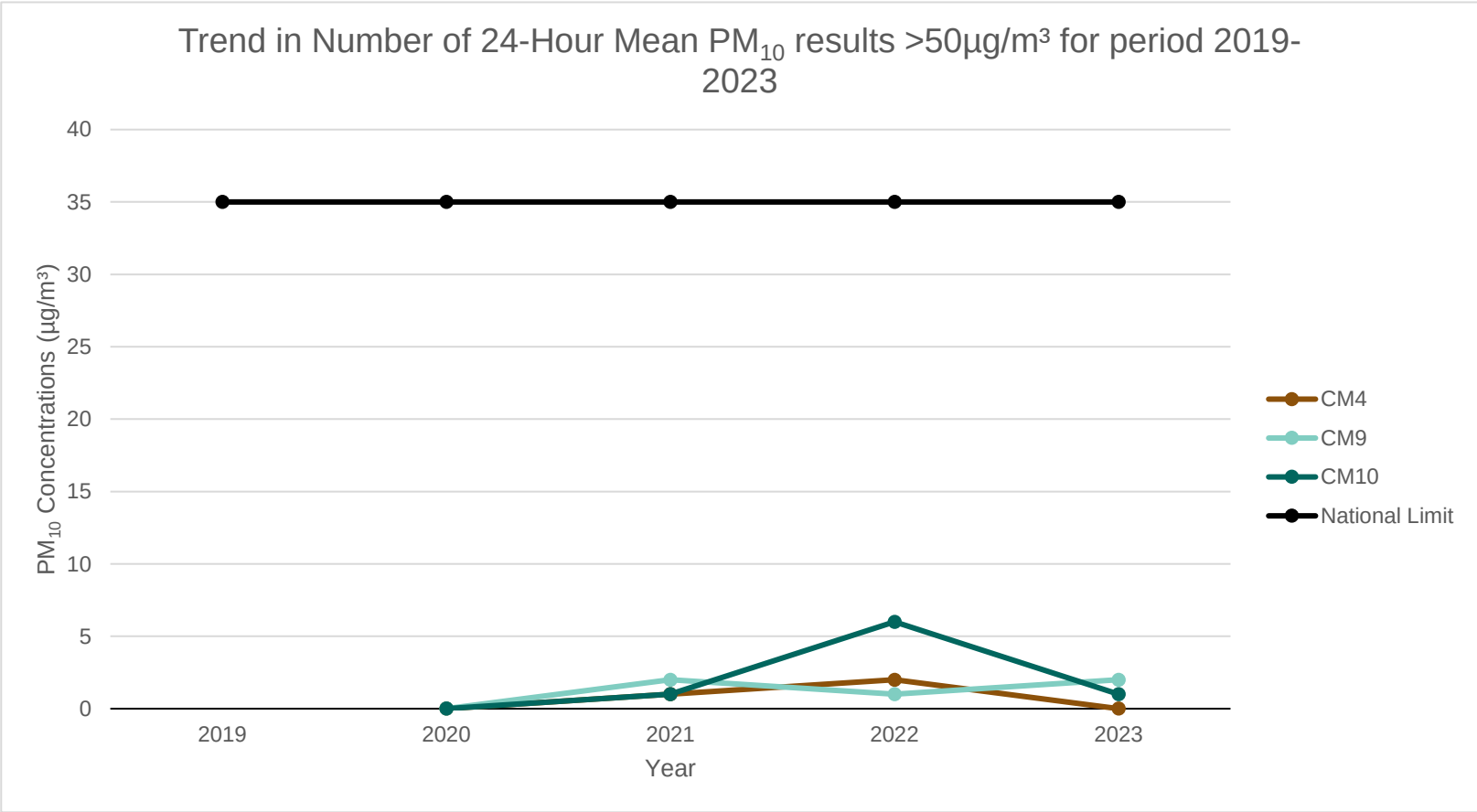
Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.4 – Trends in Number of 24-Hour Mean PM_{10} Results > 50µg/m³



Trend in No of 24 hour mean PM 10 results.

The above graph shows no likelihood of the 24-hour PM_{10} objective being exceeded.

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM4	286617	71332	Roadside	85.22	71.01	No Data	6.6	6.5	10.3	6.9
CM9	293658	72979	Roadside	94.27	70.7	Not Installed	4.3	4.7	7.2	8.7
CM10	293391	73102	Roadside	98.21	73.66	Not Installed	4.8	5.3	8	10.1
GB0013R	278611	78949	Rural Background	99.22%	99.22%	Not Installed	Not Installed	Not Installed	5.6	4.9

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

Notes:

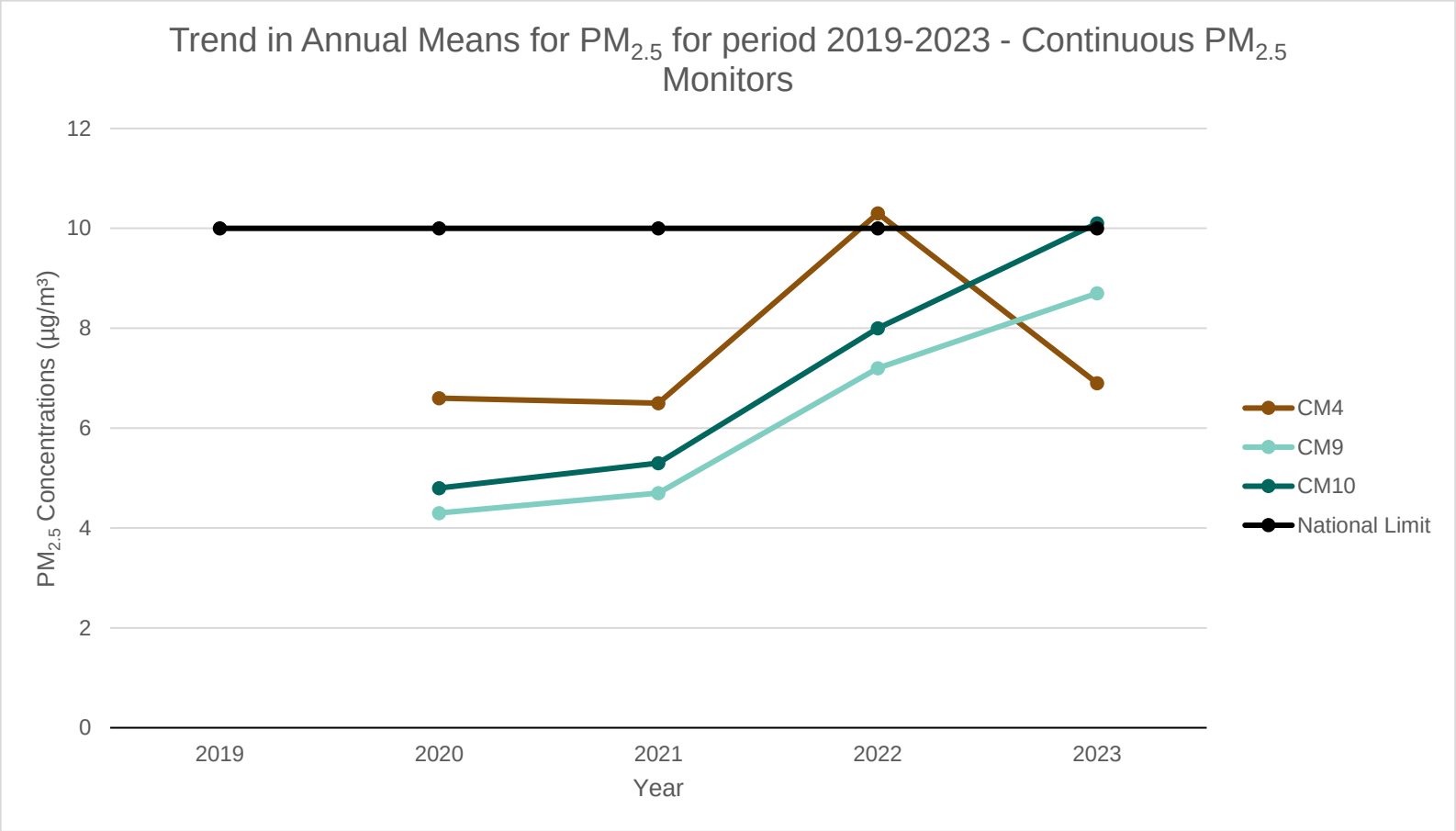
The annual mean concentrations are presented as $\mu g/m^3$.

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.5 – Trends in Annual Mean $PM_{2.5}$ Concentrations



Trend in Annual Mean PM 2.5 concentrations

It is too early in the monitoring programme to draw any conclusions from this monitoring.

Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
2	293277	73095	35.0	36.2	35.5	33.5	32.8	37.8	32.2	26.9	38.4	37.4	23.5	27.8	33.1	26.8		
3	286967	73146	43.8	39.4	31.5	29.5	26.6	27.2	27.1	25.4	37.7	37.4	36.8	28.5	32.6	26.4		
4	285526	71010	46.6	49.7	44.8	47.4	43.5	43.3	33.5	31.8	46.0	48.3	44.8	28.5	42.3	34.3		
5	293387	73101	38.5	49.9		49.1	47.0	46.9	29.3	33.3	41.6	40.0	39.7		41.5	33.6		
6	286630	71329	34.6	38.4	31.8	36.2	34.6	30.9	20.0	25.0	32.3	31.6	31.3	20.5	30.6	24.8		
8	285991	71158	35.4	36.3	27.6	33.0	28.3	27.4	19.5	22.9	30.9	30.9	33.6	20.9	28.9	23.4		
9	287073	70915	20.2	18.5		11.8	8.4	10.2	8.9	9.5	13.6	15.4	16.8	11.2	13.1	10.6		
11	286345	71078	34.8	33.5	29.4	32.5	26.5		22.3	24.1	29.6	32.4	29.2	25.5	29.1	23.5		
13	286061	70812	10.1	10.4	7.2	6.6	5.5	5.5	4.2	5.2	7.3	7.7	9.1	4.0	6.9	5.6		
15	275659	69917	36.3		27.9		23.3	22.6	21.3	19.9	27.4	33.0	31.7	23.1	26.6	21.6		
21	286056	71334	45.0	46.1	36.1	38.9	36.2	38.1	29.5	29.8	37.6	41.0	40.6	30.3	37.4	30.3		
22	297737	81748	44.5	44.4	31.9	33.1	31.9	29.1	26.1		33.6	31.0	41.1	31.4	34.4	27.8		
23	286519	71344	35.0	39.8	32.6	34.1	25.8	28.4	25.1	25.1	35.1	29.2	33.0	24.0	30.6	24.8		
24	286061	71151	39.2	44.1	36.4	40.2	36.0	35.7	27.5	28.4	38.3	39.7	39.0	29.2	36.1	29.3		
25	286703	70922	36.9	39.0	31.4	33.5	33.9	34.8	25.5	26.5	34.8	37.6	34.0	29.7	33.1	26.8		
26	296175	77738	8.1	8.2		6.0		4.9	4.3	0.5	7.5	7.6	9.4	5.0	6.2	5.0		
27	293231	73085	38.5	37.6	38.7	39.6	36.4		37.9	33.4	43.5	40.3		30.1	37.6	30.5		
31	286517	71336	35.3	39.6	33.4	36.2	27.6	28.1	27.2	24.4	34.7	38.2	34.8	26.2	32.1	26.0		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
32	286957	73112	28.0	26.8	21.9	18.7	16.9	18.8	17.7	16.5	23.2	27.1	24.5	20.8	21.7	17.6		
33	285624	71418	46.4	43.3	38.1	37.9	36.9	34.2	36.0	34.4	40.1	40.9	42.4	35.7	38.9	31.5		
34	285675	71393	25.7	29.1	23.2	23.9	26.9	23.1	14.6	18.8	23.7	25.1	25.9	16.2	23.0	18.7		
37	284851	72101	23.0	24.1	15.5	17.7	17.7	15.9	1.8	14.3	19.1	18.3	19.5	1.0	15.6	12.7		
38	286757	72583	36.6	35.6	28.9	25.7	25.6		22.7	23.1	30.4	32.9	34.1	25.1	29.2	23.6		
40	286987	73148	48.4	57.5	43.5	52.7	50.9	47.2	36.2	36.6	51.5	46.3	43.5	27.3	45.1	36.6		
42	285477	72510	29.7	31.6	23.3	23.2	17.6	18.1	18.1	18.5	27.9	27.5	28.5	20.7	23.7	19.2		
47	293256	73109	27.7	28.8	23.1	23.0	22.1	21.7	19.0	18.7	24.1	24.1	26.1	20.0	23.2	18.8		
48	293446	73091	55.3	56.3	48.0	56.9	58.0	57.1	43.8	45.2	56.1	49.5	43.1		51.7	**41.9**		
49	293541	73083	48.9	53.4	40.2	42.5	38.9	39.6	40.4	36.3	45.8	46.2	49.6		43.8	35.5		
52	287544	73067	44.4	44.0	33.1	31.6	29.1		29.1	25.9	37.7	38.6	37.1	29.5	34.6	28.0		
53	285537	71035	44.5	43.8	40.8	39.5	34.5	37.5	33.0	32.0	44.7	44.8	43.5	37.4	39.6	32.1		
54	286969	73130	39.1	36.0	30.1	28.3	26.6	26.7	23.1	23.5	33.3	34.4	35.3	28.8	30.4	24.6		
55	285554	71043	44.6	51.0	42.2	46.4	42.1	43.5	33.3	34.4	46.7	45.7	40.7	31.1	41.8	33.9		
57	297724	81743	16.1	15.3	10.8	10.9	10.8	9.4	8.0	8.4	12.2	13.0	16.0	11.3	11.8	9.6		
60	293363	73094	22.7	26.2	18.9	22.5	21.7	23.0	15.2	17.4	18.7	20.5	18.5	13.4	19.9	16.1		
64	286985	73111	23.5	22.8	16.3	14.9	13.4	13.1	9.6	11.8	17.6	20.1	19.7	13.2	16.3	13.2		
65	285518	71018	29.2	29.8	24.7	24.1	23.3	21.8	18.5	18.8	24.4	25.2	26.2	21.4	23.9	19.4		
68	296485	77134	14.1	16.0						7.6		21.7		12.9	14.4	10.6		
73	283828	71993	26.9			21.2	16.5	17.9	17.6	16.6	13.5	30.2	24.9	19.0	20.4	16.5		
74	285219	71616	41.9	47.0	38.0	42.1	34.8	37.2	33.7	30.0	38.9	39.8	37.9	33.1	37.9	30.7		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
75	281149	78302	20.1	19.7	15.1	15.4		13.8	11.4	13.1	16.0	17.6	11.8	14.2	15.3	12.4		
76	281529	78389	24.9	24.6	21.1	17.7	17.3	15.4	16.1	15.3	19.3	13.2	22.0	17.6	18.7	15.2		
77	293451	73081	35.7	40.7		40.2	28.5	30.0			34.0	33.0	33.4	27.2	33.6	27.3		
78	293473	73076	33.9			36.1	26.4	31.1			30.5	33.8	28.8	22.5	30.4	23.5		
79	293354	73109	35.2	37.7	25.3	28.4	25.0	24.8	21.9	26.0	28.6	27.0	34.6		28.6	23.2		

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1.**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **Teignbridge District Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within Teignbridge District Council During 2023

Teignbridge District Council has not identified any new sources relating to air quality within the reporting year of 2023.

Additional Air Quality Works Undertaken by Teignbridge District Council During 2023

Teignbridge District Council has not completed any additional works within the report year of 2023.

QA/QC of Diffusion Tube Monitoring

The NO_2 tubes diffusion tubes are analysed by Gradko International Limited in Winchester utilising 20% TEA in water for a 1-month exposure duration. Periodically samples of tubes prepared for exposure are spiked with known concentrations of nitrate solution and measured. Blank tube values are also monitored from each new batch of tubes prepared. Once a month, a stock solution containing a known amount of nitrate is received from AEA Technology and measured. The results are used as part of the UK NO_2 Survey QA/QC scheme. This stock solution is used by Gradko to check the ultra-violet spectrophotometer calibration graph. Gradko also participate in the inter-laboratory round robin exercise via the WASP scheme. The performance of the laboratory is rated as satisfactory in the centralised AIR NO_2 PT scheme for quality assurance and quality control.

Diffusion tube monitoring for 2023 has been completed in adherence with the 2023 Diffusion Tube Monitoring Calendar.

3.2.4 Diffusion Tube Annualisation

All but two diffusion tube monitoring locations within Teignbridge District Council recorded data capture of more than 75%. It was therefore required to annualise the following tubes: -

Tube No 68 (Shorland House, Elm Grove Road, Dawlish)

Tube no 78 (Lamp post No 8 Bitton Park Road, Teignmouth)

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

NO_2 Annualisation Summary:

Site ID	Annualisation Factor Glazebury	Annualisation Factor Ladybower	Annualisation Factor Wicken Fen	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
68	0.9071	0.9513	0.8607		0.9064	14.4	13.1
78	0.9249	0.9590	0.9773		0.9537	30.4	29.0

PM10 Annualisation Summary:

Site ID	Annualisation Ratio Plymouth	Annualisation Ratio Honiton	Annualisation Ratio Yarner Wood	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CM4	1.026	1.026	1.352		1.135	12.44	14.12
CM9	0.977	1.060	1.067		1.035	13.61	14.09
CM10	0.977	1.060	1.067		1.035	17.17	17.8

PM2.5 Annualisation Summary:

Site ID	Annualisation Factor Plymouth	Annualisation Factor Honiton	Annualisation Factor Yarner Wood	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CM4	1.017	1.001	0.990		1.003	6.9	6.9
CM9	1.000	1.074	1.108		1.061	8.22	8.7
CM10	0.977	1.068	1.101		1.055	9.58	10.1

3.2.5 Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides

guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

For comparison purposes with passive data within the report AURN data has been provided. However, as the monitor is not within the control of Teignbridge District Council a national bias adjustment factor of 0.81 has been applied to the 2023 monitoring data. A summary of bias adjustment factors used by Teignbridge District Council over the past five years is presented in Table C.2.

The diffusion tube bias adjustment factor is found from the DEFRA spreadsheet provided at National Bias Adjustment Spreadsheet. The March 2024 (Version 03/24) spreadsheet was used, providing a bias adjustment figure for 2023 for Gradko diffusion tubes using a 20% TEA in water analysis method of 0.83.

NO_2 Diffusion Tube Handling Procedures

Teignbridge District Council's NO_2 diffusion tube monitoring is carried out in full accordance with the site quality assurance procedures contained in the UK Automatic Network Site Operator's Manual. Teignbridge also participates in the NO_2 UK Network.

Data Quality Objective and Roles

Adopted within our Policy and Strategy are our Council's Data Quality Objectives which have been drafted to create a memorable acronym **(HEART).** The objectives embrace the Audit Commissions data quality guidance and encompass the six characteristics that they use to define quality data as data that is: accurate, valid, reliable, timely, relevant and complete. These six characteristics are incorporated into our data quality objectives which we use throughout the year to test compliance and help us ascertain any likely risk.

Held by	who has responsibility for specific data.
Evidenced	audit trail or work complaint with good data quality procedures

Accurate	decision-makers should be clear about their information requirements for accuracy.
Relevant	must be sure that it describes the actual state under discussion (doesn't mislead).
Timely	Data captured is reported yearly using an Annual Status Report format set out by central government.

Tubes received / stored / put out following current NOx route / recovered / and sent to Gradko in accordance with nationally approved handling procedure. In March 2018 procedure reviewed via webinar to ensure methodology is consistently applied.

Results come back and are screened by Technical Officers for obvious anomalies. Technical Support Officers enter data into spreadsheet. Random checks carried out by BW to verify data received with data inputted.

Spreadsheet has inbuilt conditional format which is designed by Data Officer who applies current government guidance to do so. Spreadsheet has been set to show all exceedances over N/Objective.

Data captured is reported yearly using an Annual Status Report format set out by central government.

ROLE/PROMPT	DETAIL OF TASK (With links)	OFFICER	FREQUENCY
New Tubes received through the post	Tubes placed in refrigerator storage	Any	monthly
New Tubes numbered up	New tubes are numbered up based on current location sheet and returned to refrigerator storage asap	Technical Officer	monthly
Tubes put out and old tubes recovered	Gather in the old tubes and install the new tubes. Complete the “Current NOx location sheet” using waterproof marker pen.	See rota for the year	monthly
Old Tubes placed in fridge	On return to office old Tubes placed in fridge asap, and completed the current NOx location sheet put into Ian Roberts IN tray	See rota for the year	
Package and return Old Tubes to Gradko	Carried out within 2 days of recovering tubes, package and return “old tubes” to Gradko following “Procedure for sending off Diffusion Tubes ”	Technical Officer	Within 2 days Monthly
Notify any missing tubes	Email to Becky W and Colin B about any missing tubes, any observations.	Technical Officer	

Data entry to spreadsheet.	Up to 3 weeks after postage results email is sent from Gradko to Ian R and they are copied and saved to excel spreadsheet “NOx Tubes 2020”	Technical Officer	monthly
Random checks of data received against data inputted to excel Spreadsheet.	Check to verify that data received has been accurately transposed to the spread sheet. Also to identify emerging issues e.g. repeated missing tubes, random outlier results, significant variations between reference monitors and co-located tubes.	Technical Officer	Quarterly Minimum
Review of in built conditional format.	Excel spreadsheet “NOx Tubes 2020 has an inbuilt conditional format designed to process the raw data. The design applies current government guidance (LAQM T G 16*) to highlight all exceedances over the current National Objective	Data Officer	Yearly
Calculate yearly Annual Bias adjustment	Calculate yearly Annual Bias adjustment factor using National figure issued by Defra (usually announced in March). to show no of tubes exceeding in the year	Data Officer	Yearly
Apply Annual Bias adjustment	Apply Annual Bias adjustment factor to the Excel spreadsheet “NOx Tubes 2018” and calculate and complete the Annualised Bias Adjusted Mean for each tube location.	Data Officer	Yearly

Table C.1 – Bias Adjustment Factor

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Teignbridge District Council have applied a national bias adjustment factor of 0.81 to the 2023 monitoring data. A summary of bias adjustment factors used by Teignbridge District Council over the past five years is presented in Table C.2.

The diffusion tube bias adjustment fact is found from the DEFRA spreadsheet provided at National Bias Adjustment Spreadsheet. The March 2023 (Version 04/23) spreadsheet was used, providing a bias adjustment figure for 2022 for Gradko diffusion tubes using a 20% TEA in water analysis method of 0.83.

Table C.2 – Local Bias Adjustment Calculation

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO_2 monitoring locations within Teignbridge District Council required distance correcting during 2023.

QA/QC of Automatic Monitoring

Teignbridge District Council does not currently operate any Automatic Monitoring sites.

An AURN monitor operated by Bureau Veritas has been identified within the boundaries of Teignbridge District Council. The data from this monitor is available from UK-Air and has been included within this report for comparative purposes.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

The type of PM_{10}/$PM_{2.5}$ monitor(s) utilised within Teignbridge District Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

Although indicative, Osiris monitoring for PM_{10} and $PM_{2.5}$ has taken place at 3 locations in the district. Unfortunately, the available data for all three sites (Bitton Park Road, Alexandra Terrace and Queen Street) was annualised due to there not being 75% data or more.

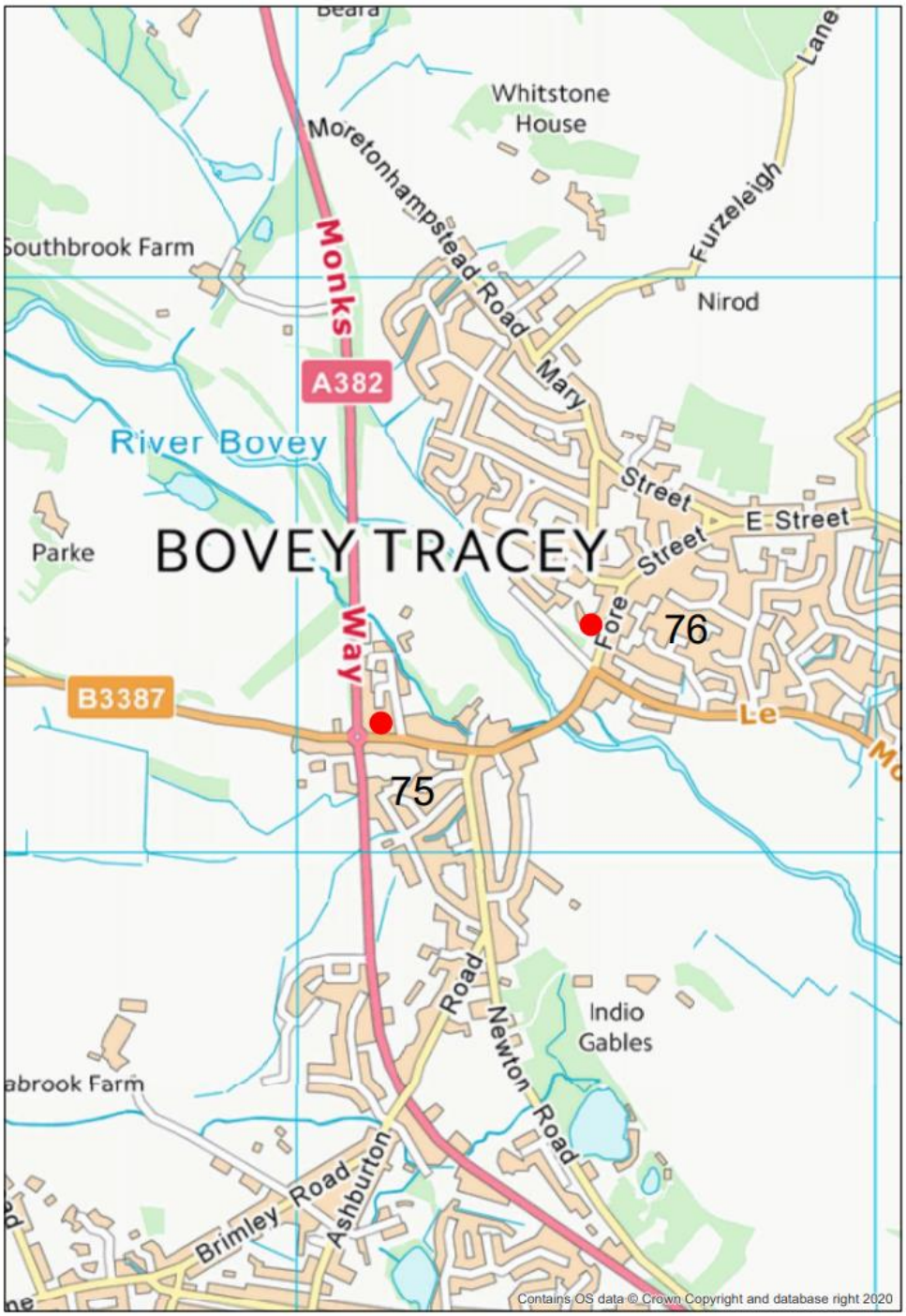
NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO_2 concentrations corrected for distance are presented in Table A.3.

No automatic NO_2 monitoring locations within Teignbridge District Council required distance correction during 2022.

Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 – Map of Non-Automatic Monitoring Site

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Westcote
Elm
Grove
68
Gatehouse Hill
DAWLISH
Hill
Road
Stockton
High Street
The Strand
Brunswick Place
Dawlish
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Chudleigh
Road
Ley
Lane
Road
Longford
B3193
Road
Broadway
Road
The Bungalow
Crossley Moor Road
Lane
64
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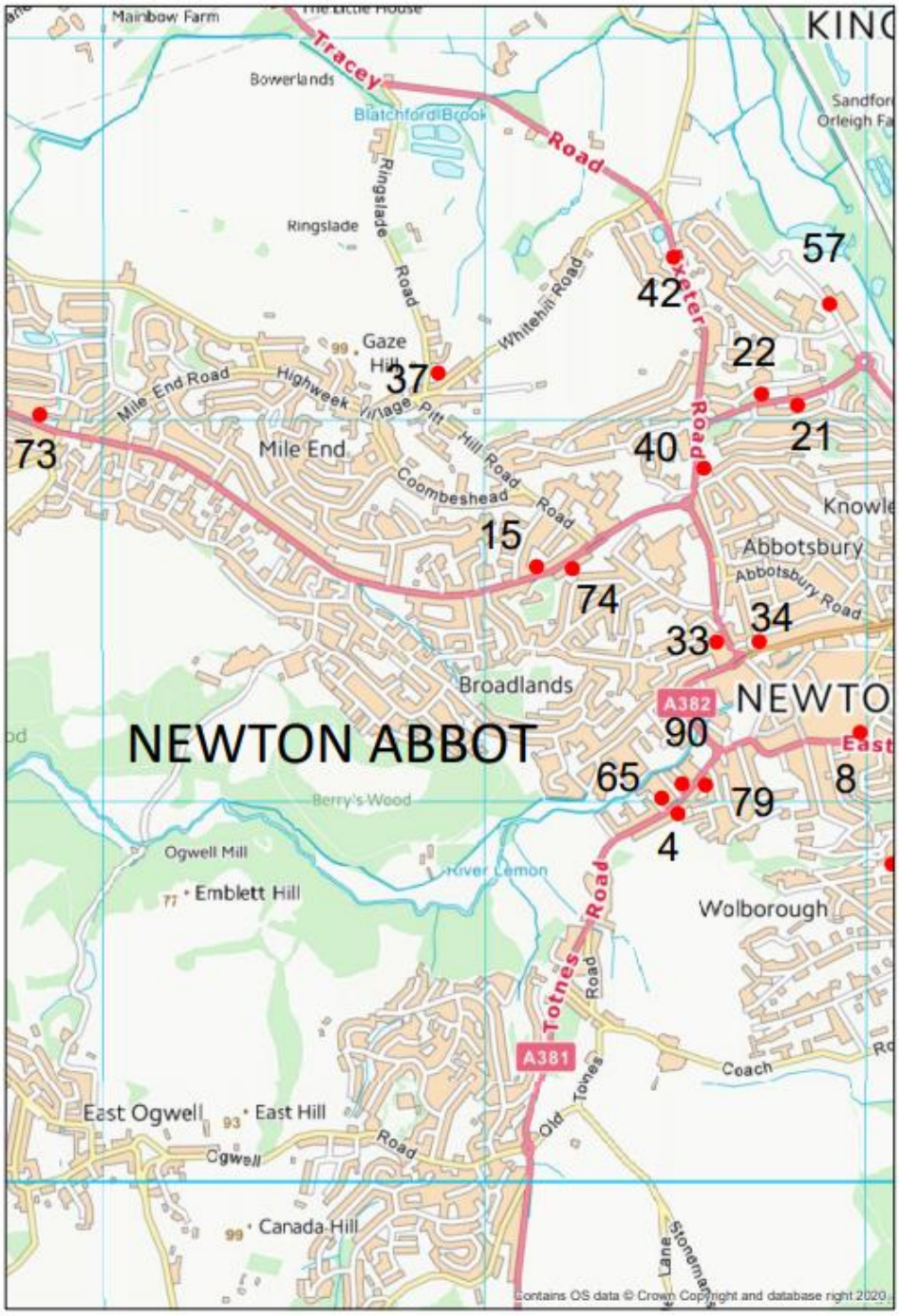
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Bowerlands
Blatchford Brook
Ringslade
Ringslade Road
Whitehill Road
Exeter Road
Gaze Hill
Mile End Road
Highweek Village
Pitt Hill Road
Mile End
Coombeshead Road
Abbotsbury
Abbotsbury Road
Broadlands
NEWTON ABBOT
A382
Berry's Wood
Ogwell Mill
River Lemon
Emblett Hill
Wolborough
Totnes Road
A381
East Ogwell
East Hill
Ogwell
Canada Hill
Coach
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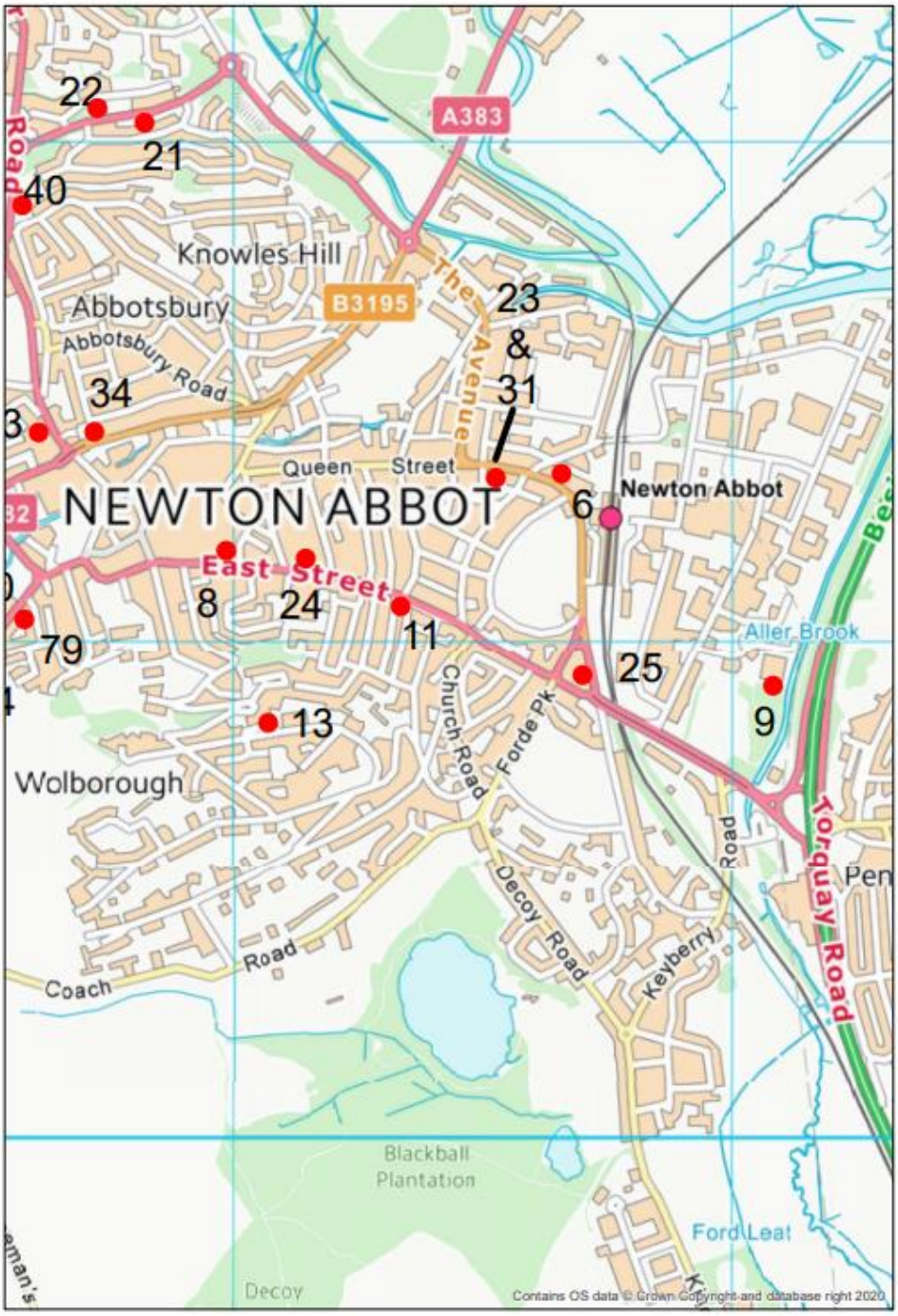
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40
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Knowles Hill
Abbotsbury
B3195
Abbotsbury Road
34
23
&
31
Queen
Street
NEWTON ABBOT
6
Newton Abbot
East Street
8
24
11
79
25
Aller Brook
9
13
Church Road
Forde Pk
Wolborough
Road
Torquay Road
Decoy Road
Keyberry
Coach
Road
Blackball
Plantation
Ford Leat
Decoy
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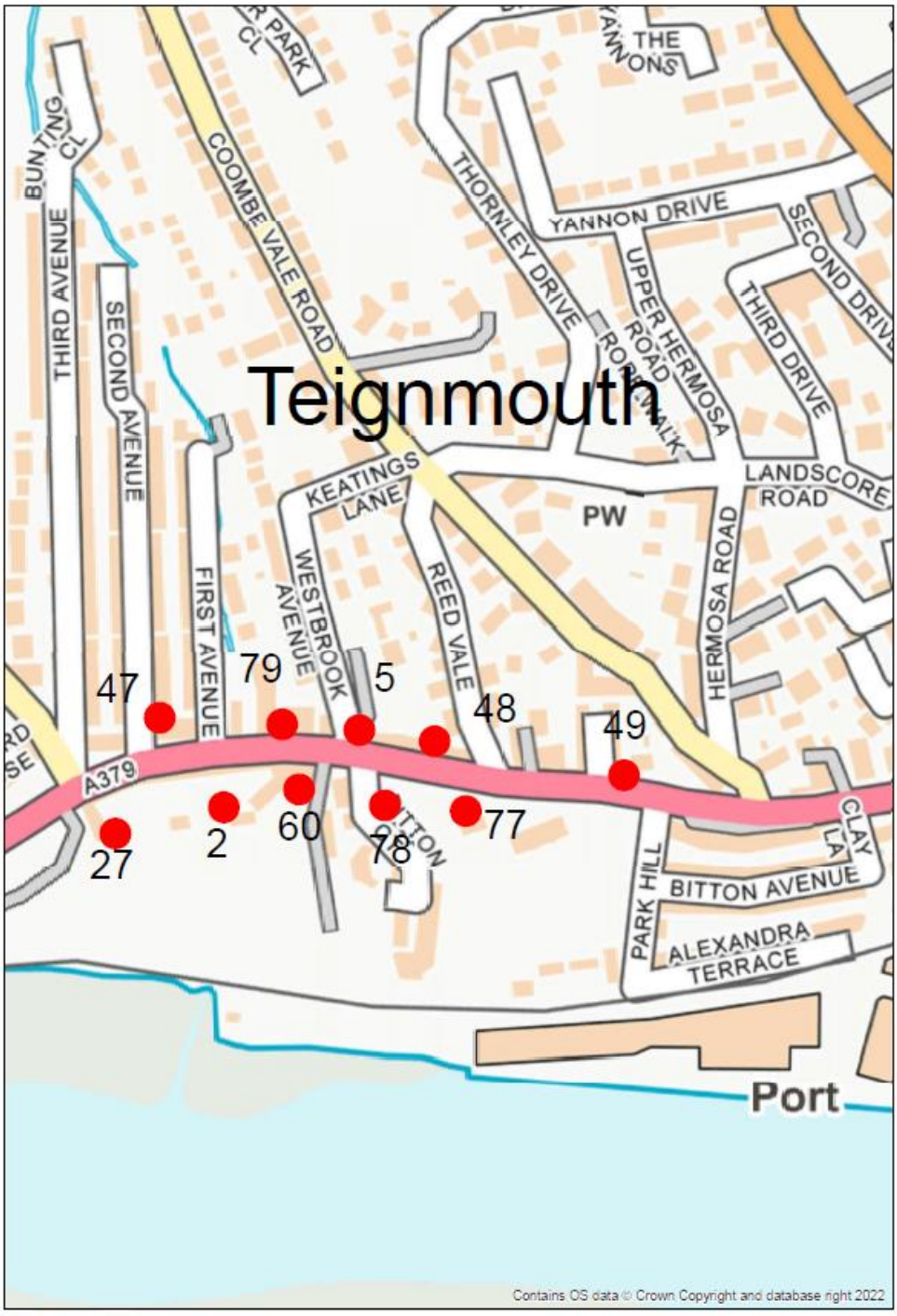
Teignmouth
THIRD AVENUE
SECOND AVENUE
FIRST AVENUE
COOMBE VALE ROAD
THORNLEY DRIVE
YANNON DRIVE
UPPER HERMOSA ROAD
SECOND DRIVE
THIRD DRIVE
LANDSCORE ROAD
KEATINGS LANE
WESTBROOK AVENUE
REED VALE
HERMOSA ROAD
PW
A379
BITTON AVENUE
ALEXANDRA TERRACE
PARK HILL
Port
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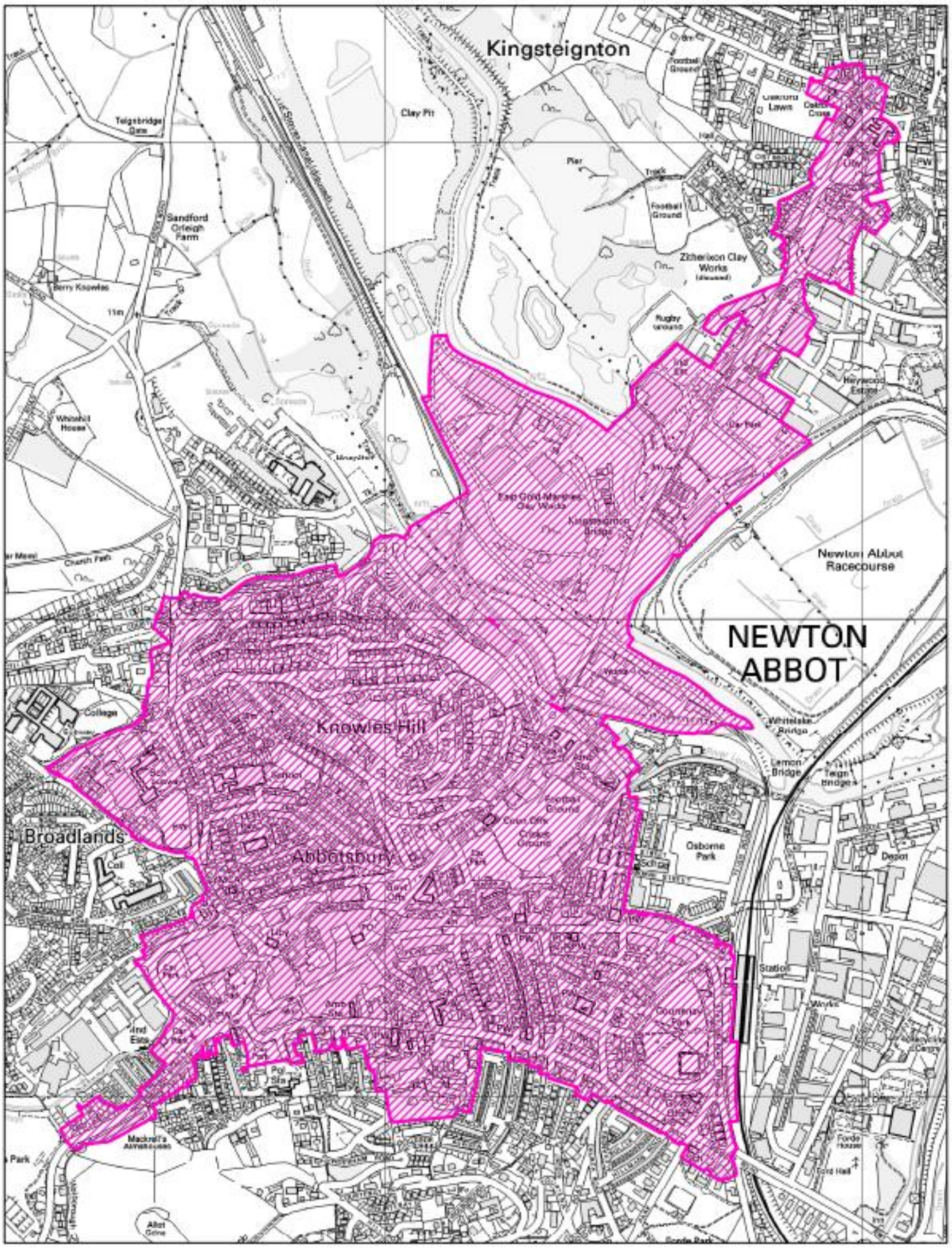
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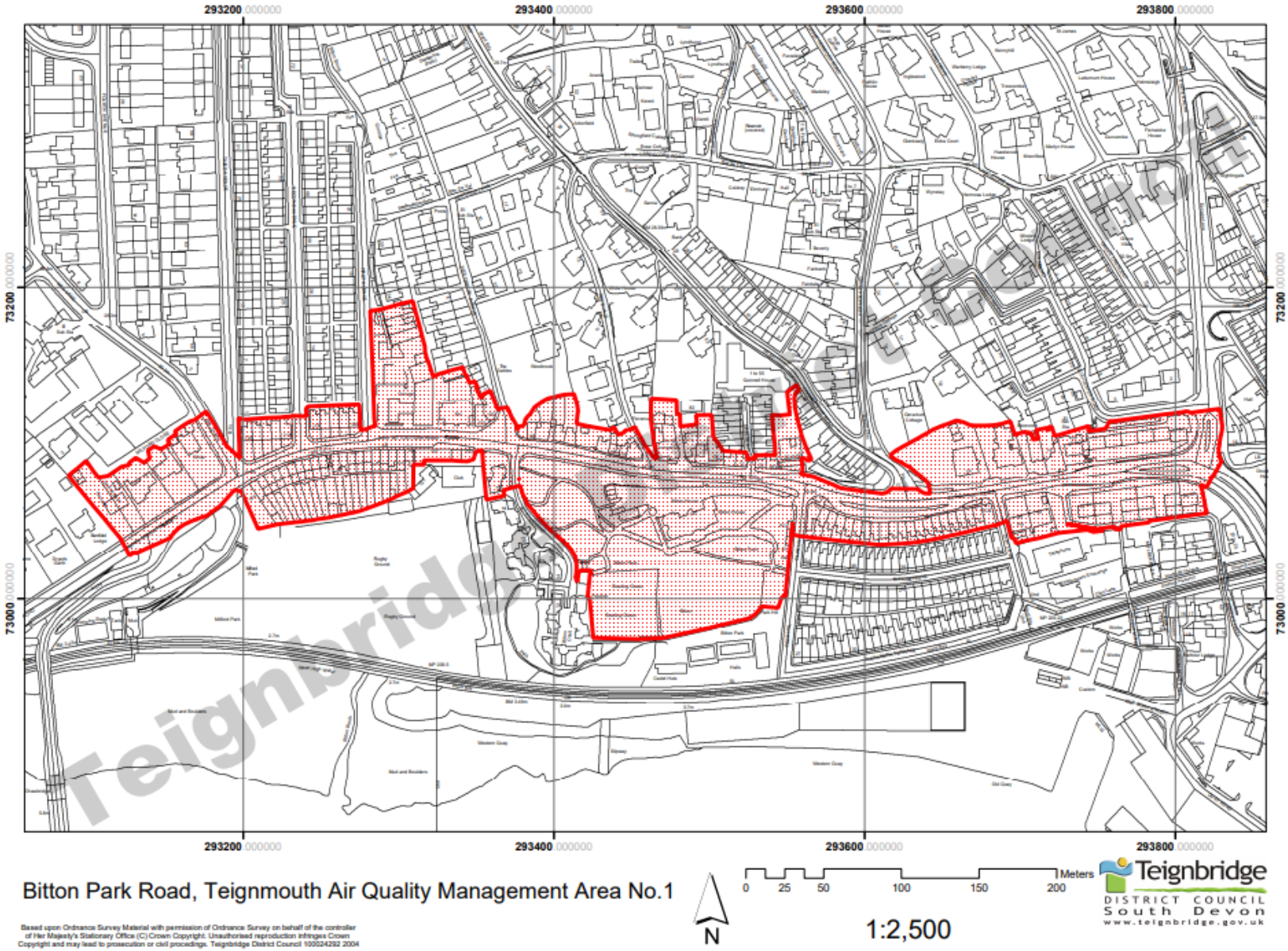
Clay Pit
Teignbridge Gate
Sandford Orleigh Farm
Berry Knowles
Whitehill House
Church Path
Football Ground
Zitherixon Clay Works
Rugby Ground
Car Park
Newton Abbot Racecourse
NEWTON
ABBOT
Knowles Hill
Broadlands
Abbotsbury
College
Osborne Park
Station
Lemon Bridge
Teign Bridges
Whitelake Bridge
Depot
Works
Forde House
Mackrell's Almshouses
Allot Gdns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Teignbridge
Bitton Park Road, Teignmouth Air Quality Management Area No.1
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Teignbridge
DISTRICT COUNCIL
South Devon
www.teignbridge.gov.uk

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual mean
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[7] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
TDC	Teignbridge District Council

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.
- Teignbridge District Council Website
- Teignbridge District Council Air Quality Action Plan
- National Bias Adjustment Factor Spreadsheet.